CITY OF IOWA CITY
410 East Washington Street
Iowa City, Iowa 52240-1826
(319) 356-5000
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www.icgov.org

DATE: February 1, 2017

REQUEST FOR PROPOSAL:

#17-110 REQUEST FOR PROPOSAL FOR THE BELT FILTER PRESS REPLACEMENT PROJECT

NOTICE TO PROPOSERS: Sealed Proposals will be received at the Office of the City Clerk, until the time and date specified below.

ADDRESS PROPOSALS TO: Attention of the City Clerk's Office, City Hall, 410 E. Washington St., RM 140, Iowa City, IA 52240-1826, on or before the proposal opening local time and date specified below. Proposals shall be sealed and clearly marked on the front **"Request for Proposal for the Belt Filter Press Replacement Project."**

FAXED or E-mailed Proposals will not be accepted.

BONDS AND INSURANCE: Insurance is required for this project (see Section IX). No bid security is required.

QUESTIONS: All questions, inquiries, requests for public information and clarifications regarding this Request for Proposal can be answered by **e-mailing** the following representative no later **than noon (local time), February 17, 2017**. All questions regarding this project must be sent via e-mail in order to receive a response.

Purchasing
Mary Niichel-Hegwood
Purchasing Agent
mary-niichel@iowa-city.org
M-F, 8:00 a.m. – 5:00 p.m.

NO CONTACT POLICY. After the date and time established for receipt of proposals by the City, any contact initiated by the proposer or by a City representative, other than the Purchasing Division representative listed herein, concerning this Request for Proposal is prohibited. Any such unauthorized contact may cause the disqualification of the proposer from the procurement transaction.

PROPOSALS ARE DUE NO LATER THAN: 2:30 p.m. (local time), March 1st, 2017. Proposers shall submit five (5) copies of their proposal.

The City is not responsible for delays occasioned by the U.S. Postal Service, the internal mail delivery system of the City, or any other means of delivery employed by the proposer. Similarly, the City is not responsible for, and will not open, any proposal responses which are received later than the date and time stated above.

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SECTION I. PROPOSAL SUBMITTAL CHECKLIST
DOCUMENTS REQUIRED TO BE SUBMITTED WITH THIS PROPOSAL

Submittals must include five (5) copies of the proposal organized as follows, with tabs for each of the numbered items below.

_____Section 1 - Executive Summary

Include a letter summarizing the proposal. The letter must be signed by an officer of the proposer or a designated agent empowered to bind the firm in the contract offer. Provide information on your firm, including, but not limited to, the official name of your company, permanent address of your company, number of years in business, the name, address, phone number and email address of the person(s) who will serve as the Project Manager for the project and serve as the Principal Contact with the City.

_____Section 2 - Qualifications

Provide the names, abilities, qualifications, licenses and experience of the individuals who will be assigned to this project and their experience on similar contracts. Include résumés for personnel to be assigned to the project. Outside consultants, associates, or subcontractors who may be retained for this project must be included.

_____Section 3 - Experience with Similar Projects

Provide a detailed description of your firm's involvement in projects of similar scope and size. Include client name, location, number of units, type, sizes, date of installation up to a maximum of 20 installations.

_____Section 4 - Client References

Provide a minimum of five (5) references from past and/or present clients for projects similar in scope to this project including the company or agency's name and address, and the name, title, and phone number of each reference, and a project completion date.

_____Section 5 - Equipment Information

See Section III. Belt Filter Press Technical Specifications, 1.03 Submittals, for details of equipment information to be provided with the proposal.

_____Section 6 - Extended Service Plan Information

See Section VI. Extended Service Plan.

_____Section 7 - Bench Testing Results

See Section VII. Bench Testing Requirements, Paragraph 3.

_____Section 8 – Schedule for Delivery and Pilot Testing

Provide a detailed schedule including the lead time for delivery of the equipment and availability for Pilot Testing.

_____Section 9: Pricing Form and Company Information

The form provided in Section XII must be used and included in the proposer's submittal. Substitute forms will not be accepted. The form must be complete and signed. The City is not responsible for the proposer's failure to provide information and pricing on required items. The submitted pricing must include all of the costs required to perform the tasks to complete the project in full. Any costs not included in the proposer's submitted proposal that are required to complete the project, will be the responsibility of the awarded proposer. These costs include, but are not limited to, labor, materials, equipment, travel (lodging and transportation), shipping, on-going maintenance, etc.

SECTION II. SPECIFIC CONDITIONS AND INSTRUCTIONS TO THIS PROPOSAL

A. SCOPE OF WORK:

The City of Iowa City is seeking proposals from qualified and experienced proposers to supply two (2) Belt Filter Presses to replace existing presses with the option for a 3rd press. Proposers must have a minimum of five (5) years' experience with design and fabrication of belt filter presses for sludge dewatering in wastewater treatment.

It's the City's intention is to select the belt filter presses based on the submitted proposals and the pilot testing. Upon selection of the belt filter presses, the City will proceed with a formal public improvement process for the purchase and installation of the belt filter presses. This public improvement solicitation will specify the equipment and vendor selected from this Request for Proposal.

An initial evaluation of the proposals and results from mandatory bench testing of City's sludge will be utilized to shortlist proposers for mandatory pilot testing. Bench testing will be performed by the proposer per Section VII, Bench Testing Requirements. The Bench Testing Results will be considered as part of the shortlisting process for invitation to selected Proposers for Pilot Testing.

On-site Pilot Testing will be conducted per Section VIII, Pilot Testing Protocol. The City will provide a stipend of $13,000 to Proposers that perform Pilot Testing. The stipend is to be applied to costs associated with the pilot testing, including but not limited to shipping, installation, time and materials, operation, training, travel expenses, and any other costs required to have a Proposer representative on site during the entire pilot period. The Proposer must execute the attached Pilot Testing Agreement prior to any pilot testing and to continue with the RFP process.

B. TECHNICAL REQUIREMENTS:

Belt filter press technical requirements are specified in Section III. Belt Filter Press Technical Specifications.

C. TRAINING:

On-site training for all aspects of the system shall be provided to the City's staff. **A detailed outline of the proposed training shall be submitted with the proposal (Item 5 of the vendor's submitted proposal).** The awarded proposer will be required to supply an electronic copy of all training materials as specified in Section IV. Operating and Maintenance Data and Section V. Manufacturer's Field Services.

D. WARRANTY:

Proposals shall include full warranty and support on all items for term specified in Section III. The awarded vendor warrants that all articles, materials and service performed shall be consistent with manufacturer's specifications and will be free from defects. All shipping/transportation costs, parts, and labor costs shall be included in the initial warranty coverage and on-going maintenance coverage.

Repair and/or replacement shall be provided at no charge during the warranty period for parts with manufacturing defects. The warranty shall include all software updates and patches including all labor to install, if proposed system includes software. If remote access is required, the awarded vendor will be responsible for all costs.

The warranty period does not begin until installation, training and successful operation of the complete system. The City will provide written notification to the vendor/contractor once installed and upon acceptance by the City.

Additional warranty requirements are specified in Section V. and VI.

E. PROPOSAL REQUIREMENTS:

1.) Proposers are expected to fully inform themselves as to the conditions, requirements, and specifications before submitting a proposal. The submission of a proposal implies proposer's acceptance of the terms and conditions herein, unless otherwise stated. This includes the attached Pilot Testing Agreement.

2.) The proposer is responsible for all costs related to the preparation of this proposal. The City reserves the right for a presentation and/or demonstration of the proposed system from the proposer; this request shall be at no cost to the City.

3.) All costs associated with this project must be included in the vendor's submitted proposal. The total project cost for furnishing the specified equipment and services to overseeing installation, adjustment, checkout, testing, and training resulting must include all costs for required equipment, supplies, shipping, labor, training, and spare parts for the full functionality and use of the system. Any costs not specifically set forth in this Request for Proposal will be the responsibility of the proposer, and will be deemed included in the fees and charges bid herein.

4.) Proposed pricing shall specify F.O.B. destination.

5.) Proposed pricing and/or percentage discount shall be firm from the beginning date of the signed purchase order, with the option to order additional system components with the proposed pricing and/or percentage discount for one (1) year after the date stated on the purchase order.

6.) Responses may be rejected if the proposer fails to perform any of the following:

   a. To adhere to one or more of the provisions established in this Request for Proposal.
   b. To demonstrate competence, experience, and ability to provide the commodities and services described in this Request for Proposal.
   c. To submit a response on or before the deadline and complete all required forms.
   d. To fulfill a request for an oral presentation and/or on-site demonstration.
   e. To respond to a written request for clarification or additional information.

7.) Proposers may be required to submit financial statements subsequent to the opening of proposals together with such information as may be required to determine that a contemplated awardee is fully qualified to receive the award.

F. DEMONSTRATION OR ORAL PRESENTATION:

Vendors who submit a proposal in response to this RFP may be required to give a demonstration and oral presentation of the proposed system at no cost to the City. This will provide an opportunity for the vendor to clarify and elaborate on their proposal, and the City to ask questions. This is a fact-finding and explanatory session only, and will not include negotiations. The City will schedule the time and location of these presentations. Presentations will be held at the City. Demonstrations and oral presentations are at the option of the City, and may or may not be conducted.

G. CONTRACT NEGOTIATIONS:

The City reserves the right to negotiate specifications and terms and conditions which may be necessary or appropriate to the accomplishment of the purpose of this Request for Proposal. The City's Request for Proposal and the proposer's submitted proposal are made an integral part of the resulting contract. All

responses, supplemental information, and other submissions provided by the proposer during discussions or negotiations will be held by the City as contractually binding on the successful proposer.

H. EVALUATION PROCESS:

An evaluation committee will independently evaluate the merit of proposals received in accordance with the evaluation factors defined in the RFP. Failure of the proposer to provide any information requested in the RFP may result in disqualification of the proposal and shall be the responsibility of the proposer. Each proposal submitted stands alone and will be evaluated on its own merits in terms of meeting the City's requirements and terms and conditions, pricing, installation schedule, and overall responsiveness to the Request for Proposal. **Proposer submission of a proposal implies proposer acceptance of the evaluation technique and proposer recognition that some subjective judgments shall be made by the City of Iowa City during assignment of points.**

1) An initial evaluation of the proposers' submittals and bench testing results will be performed to determine a shortlist of proposers to be invited for pilot testing. The initial evaluation will be based on a variety of considerations such as machine features, materials, size, bench test results, and perceived operability and maintainability.

2) Piloted units will be evaluated in a formal selection process based on a scoring matrix defined below. The proposal that accrues the highest point total shall be recommended for award subject to the best interests of the City.

Evaluation Criteria

The following parameters will be used to judge the performance of each proposer's equipment.

- Dewatered solids concentration (% TS) – specified minimum is required for all trials required for this evaluation as noted in the pilot testing protocol.

- Solids capture – specified minimum of 95% is required for all trials required for this evaluation as noted in the pilot testing protocol. Capture shall be calculated based on the following equation.

$$Capture\ (\%) = \frac{s(f - e)}{f(s - e)}(100)$$

Where,
f = Feed concentration (% TSS)
s = cake dryness (% TS)
e = filtrate concentration (% TSS)

- Polymer demand – the required amount of polymer in dry pounds per dry ton of solids fed to the belt filter press.
- Capital cost – each proposer shall provide their formal capital cost proposal (bid amount) for the equipment meeting the requirements of the RFP.

Pilot Data Analysis

As noted in Attachment 2, Pilot Testing Protocol, during the first week of pilot operations the proposer shall operate the unit as noted and collect samples. The data shall be analyzed in the following manner:

1. Dewatered solids concentration and solids capture will be calculated for each of the data sets.

2. If either the dewatered solids concentration is less than specified minimum TS or the solids capture is less than specified minimum the following procedure shall occur:
   - Up to two (2) nonconforming data sets can be thrown out without penalty.
   - Three (3) or more nonconforming data sets will result in dismissal from further consideration.
3. The City reserves the right to further consider dismissed proposers if it is to their economic benefit to do so.
4. The median dewatered solids concentration and associated polymer dose of data sets successfully meeting the dewatered solids concentration and solids capture criteria shall be used in the life cycle cost analysis described below.

Life Cycle Cost Analysis

A life cycle cost analysis will be completed using the proposer's cost proposal and pilot testing data. The following assumptions have been made for the life cycle cost analysis.

- Evaluation period is 8 years.
- Interest rate is 3%.
- Polymer cost is $1.90/lb.
- Hauling dewatered solids cost is $9.25/wet ton.
- Solids feed to the dewatering system to be considered for O&M costs is 1,825 dry tons per year.

The present worth of capital and operating costs will be summarized in 2016 dollars. Operating costs are strictly limited to polymer requirements and dewatered solids hauling. The polymer dose and hauling will be based on the median value of the acceptable data obtained during the pilot test as noted above. The following equation illustrates the present worth calculation.

$$PW = capital\ cost\ (bid\ amount) + PW_{polymer} + PW_{hauling}$$

Where,

$$PW_{polymer} = (7.02)\left(\frac{\$1.90}{dry\ lb\ polymer}\right)\left(1{,}825\frac{dry\ tons\ dewatered\ solids}{yr}\right)\left(\frac{lb\ polymer}{dry\ ton\ dewatered\ solids}\right)$$

$$PW_{hauling} = (7.02)\left(\frac{\$9.25}{wet\ ton\ dewatered\ solids}\right)\left(1{,}825\frac{dry\ tons\ dewatered\ solids}{yr}\right)\left(\frac{1}{\%\ TS\ of\ dewatered\ solids}\right)$$

City Experience

During the second week of pilot testing the City will require staff members to score each proposer on the following two parameters:

1. Maintenance
2. Operation

Each staff member will assign a value of 1 to 5, where a higher value is a more favorable review of the equipment. Scores from all staff will be totaled and then divided by the total possible rating (e.g. if 10 staff provide scoring the maximum possible score would be 100). The following equation will be used to calculate the fraction value.

$$\text{Fractional Experience Rating} = \frac{\sum values\ by\ staff}{(number\ of\ staff)(10)}$$

For example if 10 staff members provided ratings and the sum of those ratings was 80, the fractional value used for the final rating described below would be 0.8.

Final Rating

Final selection of the proposer will be based on the previously described life cycle cost analysis, capital cost, and plant staff rating. The results will be entered into the following equation. The highest final rating will be selected for equipment purchase.

$$Final\ Rating\ (0-10) = A\left(\frac{PW_l}{PW_n}\right) + B(R_n)$$

Where,
A = present worth weighting coefficient = 8
B = City staff scoring weighting coefficient = 2
PW_l = lowest present worth of all proposers successfully completing the pilot test
PW_n = present worth proposer being rated
R_n = City staff fractional scoring value

Dismissed Proposer Reconsideration

If a proposer was dismissed due to achieving less than the specified TS dewatered solids concentration or the specified solids capture in three or more data sets as described earlier the City reserves the right to further consider that proposer's proposal on the following basis.

a. Using the all data sets from the pilot testing, including the nonconforming data sets, the calculated median dewatered solids concentration and associated polymer dose will be applied to the life cycle cost analysis.
b. If the life cycle cost analysis results in a present worth that is greater than 15% lower than the next lowest present worth the City will allow the dismissed proposer to participate in the final rating and selection.

Disclosure

A summary report will be prepared discussing the final ratings and selected proposer. The report will be made available upon request to any proposer that participated in the pilot testing.

I. EQUIPMENT SELECTION:

1) The vendor's proposal must be complete.

2.) The City reserves the right to qualify, accept, or reject any or all proposers as deemed to be in the best interest of the City. The City reserves the right to accept or reject any or all proposals and to waive irregularities or technicalities in any proposal when in the best interest of the City. The City reserves the right to accept or reject any exception taken by the vendor to the terms and conditions of the Request for Proposal.

3.) Selection of equipment, if made, will be in accordance with the terms and conditions herein.

4.) Consideration will be given to, but not limited to, functionality, system reliability and warranty, customer satisfaction and references, timeliness of delivery, and pricing.

5.) The selected vendor will be required to supply an operator's manual with operating instructions in electronic form for each piece of equipment of the multi-site storage solution at no additional cost to the City. **Acceptable electronic media is a CD, DVD or USB memory stick.** Requirements are specified in Section IV.

6.) The selected vendor will provide the City with appropriate training to operate the belt filter press. Training must be included in the cost of the project and will be scheduled at a time that will not interfere with City operations.

Belt Filter Press Procurement

City of Iowa City
Iowa City, Iowa

I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.

Jay Brady

Jay M. Brady 1/27/2017

(signature) (date)

LICENSED PROFESSIONAL ENGINEER
JAY M.
BRADY
13153
IOWA

Discipline: Civil Engineer, Iowa License No. 13153

License expires December 31, 2018.

Pages or sheets covered by this seal: RFP Sections III, IV, V, VI, VII, VII, IX

Stanley Consultants INC.
A Stanley Group Company
Engineering, Environmental and Construction Services - Worldwide

Brown AND Caldwell

SECTION III. BELT FILTER PRESS TECHNICAL SPECIFICATIONS

PART 1 GENERAL

1.01 DESCRIPTION

A. Scope:
1. This section specifies continuous belt filter press equipment for two nominal 2 meter belt filter presses as specified and required to provide a complete and operating system for dewatering temperature-phased (Thermophillic-Mesophillic) anaerobically digested sludge at the Iowa City South Wastewater Treatment Plant. Digested sludge is a combination of primary sludge and secondary sludge from a liquid treatment process that at times experiences enhanced biological phosphorus removal.
2. The belt filter press equipment manufacturer shall prepare all Shop Drawings and other submittals for all components furnished under this Section.

B. Type:
1. The belt filter press shall be specifically designed for wastewater sludge service and shall be of the continuous belt design with three distinct dewatering sections: gravity drainage, wedge compression, and roll pressurization, to yield the cake solids concentration required under this section. Equipment employing other types of dewatering sections or combinations of dewatering sections other than those specified will not be accepted. Equipment utilizing pre-thickening devices such as added gravity belts, rotary pre-thickeners, or other such devices will also not be accepted.
2. The machine shall be of the type which, in the wedge and roll pressurization zones, entrains the sludge between no more than two continuous open meshed belts with a system of rollers and belt tensioning devices acting on the rollers exclusively to provide ever increasing pressure as the sludge advances toward the discharge point of the machine. The gravity section may utilize a separate belt.
3. Equipment provided under this specification shall be of the industrial type, specifically designed for the dewatering of anaerobically digested sludge from a municipal wastewater treatment plant.

C. Design Requirements:
1. The belt filter press shall be designed in accordance with the following:

Minimum overall belt width, meters	2.2
Minimum effective filtration areas, square feet	
Gravity zone	65[1]
Wedge zone	40[2]
High pressure zone	As needed to meet Performance requirements

Notes:
[1]*Area determined on the basis of only the area supported by the belt support grid.*
[2]*Area determined on the basis of only the lower belt area supported by the belt support grid.*

2. The press shall be designed to accommodate solids up to and including 5/8 inch in any dimension without jamming, clogging, or overflow. The press shall be designed for continuous operation under the conditions set forth in this section.
3. The press shall be configured to afford an unimpeded view of the sludge in the gravity dewatering section.

D. Performance Requirements:
   1. As a minimum, the press shall provide the following performance characteristics when operating in accordance with the conditions presented in this section:
   2. Sludge Characteristics:
      a. Type of Sludge: temperature phased anaerobically digested primary and waste activated sludge
      b. Sludge Production:
      Design Annual Average Daily Sludge Production: 18,700 lb/day dry solids.
      Design Maximum Month Average. Sludge Production: 26,250 lb/day dry solids.
      c. Sludge Consistency:
      Average Sludge Dry Solids: 1.6 percent.
      Minimum Sludge Dry Solids: 0.6 percent.
      Maximum Sludge Dry Solids: 2.1 percent.
      d. Volatile Solids Content: 55 to 78 percent
   3. Belt Filter Press Parameters:
      a. Hours of Operation: 15 hours/day, 7 days/week for maximum month average sludge production.
      b. Design Sludge Flow Rate to Press at Average Percent Dry Solids: 160 gpm per press.
      c. Design Sludge Dry Solids Weight to Press: (Maximum Month Average Sludge Production): 1,000 lb/hr per press.
      d. Minimum Required Cake Dry Solids at Average Percent Feed Sludge Dry Solids: 20 percent.
      e. Minimum Solids Capture: 95 percent (filtrate solids plus washwater solids).
      f. Maximum Polymer Usage at Average Percent Feed Sludge Dry Solids: 23 lb/dry ton of feed sludge dry solids.
      g. Number of Belt Filter Presses Required: two with an option to purchase a third at the extended price

E. Service Conditions:
   1. Environmental Conditions:
      a. The sludge filter press will be located in the Sludge Processing Facility in a ventilated room as specified. The press will be mounted on a raised concrete pedestals arranged around a drainage sump directly beneath the press. The press will be subjected to frequent hosedown for cleaning purposes. The temperatures within the press room may be expected to range between 40 and 100 degrees F; relative humidity will range between 50 and 100 percent.
      b. It may be expected the material discharged to each press will be in an actively digesting state, and small quantities of digester gas may be present. The gas is expected to contain methane in concentrations of up to 70 percent, with the remainder comprised of principally carbon dioxide with up to 2000 parts per million dissolved hydrogen sulfide and trace quantities of nitrogen. While it is very unlikely explosive concentrations of methane will be present in the room atmosphere, the Manufacturer is advised that corrosive agents (moisture, hydrogen sulfide gas, sulfuric acid, etc.) will be present at all times. Accordingly, materials shall be selected to provide appropriate resistance to corrosion and every effort shall be exercised in the manufacture of the equipment to eliminate crevices, unsealed overlapping plates and similar inaccessible areas where corrosion can take place without allowing access for application of preventive measures.
   2. Controls:
      a. The press, along with the associated sludge and polymer pumps, will be operated at a variable rate to optimize combinations of feed rate, polymer addition and belt speed for various conditions of sludge concentration, organic/inorganic solids percentage and other characteristics.

3. Utility Services:
   a. Water for belt cleaning sprays will be strained plant effluent water. The water pressure at the press will range from 85 to 90 pounds per square inch. If greater pressure is required to achieve the performance requirements specified in this section, a frame mounted end suction centrifugal booster pump, located adjacent to the press structure, shall be provided with the press to supply the flow and pressure required. The pump motor's starter shall be located in the main control panel along with the other starters serving the press equipment. The cost of the pump, motor starter, conduit, base, conductors and all appurtenances required to conform the booster pump installation to the standards for this project shall be borne by the Manufacturer. Water consumption shall not exceed 95 gallons per minute. Water for cleaning sprays will be strained plant effluent, which is expected to contain up to 10 mg/l chlorine, small quantities of biological floc and dilute concentrations of industrial solvents.
   b. Polymer, in diluted solution form, will be pumped to the press polymer/sludge mixing section by a variable speed, positive displacement pump.
   c. Power for motors 1/2 horsepower and larger will be provided at 480 volts AC, 60 Hz, 3 phase. The maximum recommended belt speed for performance in accordance with paragraphs 1.02 Extended Limited Warranty shall correspond to operation of the drive motor at 480 volts AC, 60 Hz.
   d. Air for operation of the press pneumatic systems, if required, shall be obtained from compressed air system provided by manufacturer.
4. Applied Solids:
   a. Anaerobically digested primary and waste sludge from the treatment process will be pumped to the press by dedicated, variable speed positive displacement feedstock pump. The ratio of primary to secondary solids is expected to vary between 0.75 and 1.5. The sludge is expected to contain quantities of industrial wastes including solvents, petroleum products, grit, hair, rags, grease, plastic and rubber goods, and organic solids in concentrations ranging from 1.5 to 5 percent. The filter press will be routinely operated with an inlet solids concentration of 1 to 2 percent.
   b. Sludge delivered to the press will have a temperature of 55 to 100 degrees F and will have a pH which may range from 5 to 8.

1.02 QUALITY ASSURANCE

A. References:
   1. This section contains references to the following documents. They are a part of this section as specified and modified. Where a referenced document contains references to other standards, those documents are included as references under this section as if referenced directly. In the event of conflict between the requirements of this section and those of the listed documents, the requirements of this section shall prevail.
   2. Unless otherwise specified, references to documents shall mean the documents in effect at the time of Advertisement for Bids or Invitation to Bid or on the effective date of the Agreement (Pilot Testing Agreement). If referenced documents have been discontinued by the issuing organization, references to those documents shall mean the replacement documents issued or otherwise identified by that organization or, if there are no replacement documents, the last version of the document before it was discontinued. Where document dates are given in the following listing, references to those documents shall mean the specific document version associated with that date, regardless of whether the document has been superseded by a version with a later date, discontinued or replaced.

Reference	Title
ASTM A36/A36M	Structural Steel

Reference	Title
ASTM A123	Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products
ASTM A320/A320M	Alloys--Steel Bolting Materials for Low-Temperature Service
AWWA C213	Fusion Bonded Epoxy Coating for the Interior and Exterior of Steel Water Pipelines
NEMA 250	Enclosures for Electrical Equipment (1000 Volts Maximum)
NEMA ICS 2	Industrial Control Devices, Controllers and Assemblies
NEMA ICS 6	Enclosures for Industrial Controls and Systems
AGMA	American Gear Manufacturers' Association
ABMA	American Bearing Manufacturers Association

3. Obtain all equipment included in this Section regardless of the component manufacturer from a single belt filter press manufacturer.

B. Unit Responsibility:
   1. The unit responsibility as specified is assigned to the belt filter press manufacturer for the equipment specified in this section. A certificate of unit responsibility shall be provided.
   2. The unit responsibility manufacturer shall coordinate selection, coordinate design, and shall provide all mechanical equipment assembly components such that all equipment components furnished under the specification for the equipment assembly, and all equipment components specified elsewhere but referenced in this specification, is compatible and operates reliably and properly to achieve the specified performance requirements. Agents, representatives or other entities that are not a direct division of the driven equipment manufacturing corporation shall not be accepted as a substitute for the driven equipment manufacturer in meeting this requirement.

C. Extended Limited Warranty:
   1. Manufacturer of the belt press shall provide an extended warranty for the Owner. The warranty shall cover troubleshooting investigations, repair and replacement of parts due to defective materials or workmanship for the durations listed below following the date of Substantial Completion. Provide a certificate from the belt press manufacturer which defines the conditions and terms of the warranty as outlined below. All costs for the extended warranty shall be included in Manufacturer's bid. The manufacturer's certificate of extended warranty for the belt filter press equipment shall include the following:
      a. Warrant the frame and the coating for a period of three years from the date of Substantial Completion. Any defects or corrosion occurring within the warranty period shall be repaired or replaced, at no additional cost to the Owner.
      b. Warrant the rollers and the coating to be free from manufacturing defects for a period of three years from date of Substantial Completion. Neither the rollers nor coating shall require preventive maintenance during the warranty period. The warranty shall include all parts and labor and shall cover the cost of repairing or replacing any item that fails during the warranty period, provided the damage is not due to misuse or neglect by others.
      c. Warrant the complete bearing assembly, as specified herein, for a period of five years from date of Substantial Completion. The warranty shall include all parts and labor for repairing or replacing any bearing assembly part that fails during the warranty period.
   2. Belt Life Guarantee:
      a. Manufacturer shall guarantee that the belt life of each belt furnished will not be less than 4,500 hours. Belts not providing this wearability under normal usage shall be replaced. Belts providing less than 2,000 hours shall be replaced at no additional cost to Owner. Belts providing more than 2,000 hours will be paid for by Owner on a pro rata basis.

3. Performance Bond
   a. Upon award of the equipment supply contract, after completion of the pilot testing, the selected supplier shall provide a warranty that the equipment will perform as required in paragraph 1.01.E Performance Requirements. The warranty shall bind the equipment manufacturer and shall be backed by a performance and maintenance bond in the amount of 100 percent of the cost of the equipment. An irrevocable letter of credit, drawn on a U.S. government-insured banking institution, may be substituted for the specified bond. The warranty must be supplied to the Owner by the Manufacturer prior to start-up of the equipment and must be in a form acceptable to the Owner. The performance bond shall be limited to all direct costs, including labor, and consequential costs relating to any required remedy, including replacement of the equipment, associated with failure of the equipment to perform as specified in paragraph 1.01.E Performance Requirements.

D. Experience:
   1. The manufacturer shall have a minimum of 5 years' experience in the design and fabrication of belt filter presses for sludge dewatering in wastewater treatment plants.
   2. Manufacturer shall be able to demonstrate a minimum of 10 installations within the United States in wastewater applications similar to that herein specified. At minimum five of the installations shall have been in operation for a minimum of five years.
   3. A summary of the required installations shall be submitted including:
      a. Location installed.
      b. Contact information of end user.
      c. Year installed.
      d. Number of units and belt width.
      e. Type of sludge dewatered (e.g. primary, secondary, combination, digested, etc.).

1.03 SUBMITTALS

A. **The following information shall be submitted as part of the proposal**: to be used as part of the evaluation of the vendor supplied equipment:
   1. A copy of this specification section, with addendum updates included, and all referenced and applicable sections, with addendum updates included, with each paragraph check-marked to indicate specification compliance or marked to indicate requested deviations from specification requirements. Check marks (✓) shall denote full compliance with a paragraph as a whole. If deviations from the specifications are indicated, and therefore requested by the Manufacturer, each deviation shall be underlined and denoted by a number in the margin to the right of the identified paragraph, referenced to a detailed written explanation of the reasons for requesting the deviation. The Owner shall be the final authority for determining acceptability of requested deviations. The remaining portions of the paragraph not underlined will signify compliance on the part of the Manufacturer with the specifications. Failure to include a copy of the marked-up specification sections, along with justification(s) for any requested deviations to the specification requirements, with the submittal shall be sufficient cause for rejection of the entire submittal with no further consideration.
   2. Manufacturer's literature, illustrations, specifications and engineering data including: general arrangement, outline drawings, dimensions, size, weight, foundation loadings performance data, and motor horsepower.
   3. Control description and I/O list for all equipment provided by belt filter press manufacturer.
   4. Drawings showing the entire belt filter press assembly, including material list and description of all components, structural members, auxiliary items and devices.
   5. Details of any additional equipment, structural items, and devices required to conform to the available space (Reference: paragraph 2.02).

6. Pneumatic belt tensioning system, if provided, including manufacturer literature and air flow rate, pressure, and dryness requirements.
7. Hydraulic belt tensioning system, if provided, including manufacturer literature and oil flow rate, pressure, and type requirements.
8. Washwater booster pump, if provided, design curve including operating points, materials of construction for all components, and motor information.
9. Motor size and model number.
10. Control panel dimensions.
11. Recommended platform layout for accessing critical components of the equipment.
12. The following product data shall be provided:
    a. Operating and maintenance information for proposed equipment in both .pdf and .docx format.
    b. Extended warranty specified in paragraph 1.02 Extended Limited Warranty.
13. Provide installation list as described in paragraph 1.02.D.
14. Certificate of Unit Responsibility attesting that the Manufacturer accepts unit responsibility in accordance with the requirements of this Section. No other submittal material will be reviewed until the certificate has been received and found to be in conformance with these requirements. Format shall be as provided in Form A at the end of this section or similar.

B. The following submittals shall be provided by the *supplier to whom the contract is awarded* and when the noted activities have been completed and within the deadlines specified in the references:
1. Submittals shall be electronic in pdf format.
2. Calculations certified by a professional engineer registered in Iowa, documenting the structural design of the frame and rollers per requirements specified in paragraphs 2.05 Frame and 2.05 Roller Assemblies. Calculations shall be submitted within two weeks of contract award.
3. Submit a written report of the field test results required in paragraph 3.02.
4. Within 30 days of contract award:
    a. For all motors, data including type, size and model number; assembly drawings, operations and maintenance manual, rated size of the motors with supporting calculations for the selected motor size, temperature rating.
    b. Complete control panel and local control panel details, wiring diagrams showing all electrical connections to motors and variable speed controls, and logic diagrams.
    c. Control diagrams and process and instrumentation diagrams relating to the submitted equipment.
    d. Drawing and catalog information detailing all control devices in the control cabinets as well as overall panel layout interconnection diagrams and construction.
    e. Detailed installation drawings, showing the size and location of all equipment, piping, electrical, instrumentation and structural connections.
    f. Setting drawings, templates, and directions for the installation of anchor bolts and other anchorages.
    g. Anchor bolt requirements for cast-in-place construction.
5. At a minimum of 30 days prior to the event noted:
    a. Proposed on-site testing and start-up procedures.
    b. Training course outline and proposed class materials per paragraph 3.03.
6. Submit the following product data as noted:
    a. Training Certification as specified in paragraph 3.03 within 30 days of training.
    b. Affidavit as specified in paragraph 3.04 prior to contract completion.

B. The following submittals shall be provided when the noted activities have been completed and within the deadlines specified in the references:
7. Prior to award, submit report summarizing pilot testing results as specified in the pilot testing protocol.

8. Submit a written report of the field test results required in paragraph 3.02.

1.04 DELIVERY, STORAGE AND HANDLING

A. Deliver materials to the Site to ensure uninterrupted progress of the work.

B. Provide storage instructions for equipment.

C. All boxes, crates and packages will be inspected upon delivery. Damage components shall be replaced or repaired in accordance with manufacturer's instructions at no additional cost to the Owner.

PART 2 PRODUCTS

2.01 General

A. Design requirements of the unit specified shall be understood to establish minimum requirements only. The equipment, when installed and operating, shall meet or exceed the specified minimum performance requirements in paragraph 1.01.E.

B. Design belt filter presses for continuous operation.

C. The belt filter presses shall be of the continuous belt design with three dewatering zones including a gravity drainage section, followed by a wedge zone and an increasing pressure, drum and roller zone to yield the cake dryness required. The machine shall be of the type, which entrains the sludge between two continuous open meshed belts with a system of perforated and solid rollers. A belt tension system shall act on these rollers exclusively to provide increasing pressure as the sludge advances toward the discharge of the machine. A third and separate belt will be allowed for the gravity section if required per the standard configuration. Belt filter press shall be complete with all necessary motors, gear drives, hydraulic or pneumatic system, control panel, alarm system, washwater booster pump, belts and belt wash system, and appurtenances required for a complete and operable system. Dewatered sludge shall then be removed from the belts with scrapers (doctor blades) and the belts shall then be washed prior to receiving additional sludge.

D. Machine shall be completely factory assembled and tested, unless otherwise specified herein. The main frame assembly shall require only bolting to the floor and connection of external piping and electrical wiring. Flocculation devices, belts, pre-dewatering drums, and other equipment which might be damaged during shipping if mounted on the main frame shall be installed following shipment by a representative of the manufacturer. All electrical components located on the machine shall be pre-wired at the factory except connections between the machine and the control panel which will be completed in the field..

E. Machine shall be designed and constructed in such a manner so as to be suitable for continuous heavy-duty use in a humid and corrosive atmospheric environment.

F. Routine maintenance shall be possible without taking the machine out of service. Belts shall be replaceable without requiring disassembly of the belt filter presses.

G. All parts requiring routine maintenance shall be readily accessible from the outside of the machine. Side panels, where furnished, shall be easily removable for access to the machine's components and shall be securely attached to the frame when in place.

2.02 EQUIPMENT LAYOUT

A. The Manufacturer is alerted to the fact that the sludge dewatering room layout is dictated by the existing space available. The existing belt filter press layout is depicted in the reference drawings contained in the Request for Proposals.

B. The belt filter press equipment shall not extend higher than 10 feet which allows nominally three feet of headroom with structural ceiling of existing building when mounted to the existing floor elevation. SimilarySimilarly, the required space for maintenance of the equipment on any side must be possible given the constraints of the existing room. See the reference drawings contained the Request for Proposals.

C. The belt filter press equipment shall discharge dewatered cake onto the existing horizontal belt conveyor. The existing conveyor belt runs at 2'-8" above the existing floor elevation with side guards that extend to 3'-7" above the floor. Cake shall be dropped onto conveyor at a maximum height of 1'-6" above belt. Proposed equipment shall be configured to operate with the existing conveyor configuration.

D. The Manufacturer shall identify, as part of the shop drawings for the belt filter presses, complete layout of any platforms, access bridges and other auxiliary equipment recommended for operation or maintenance of the equipment including visual inspection of the top of the gravity section.

2.03 MATERIALS

Component	Material
Frame	Steel, ASTM A36, hot-dip galvanized ASTM A123
Splash guard	ASTM A320, stainless steel, Type 316LT
Drum rollers	ASTM A320, stainless steel, Type 316L
Rollers	Steel tube, ASTM A-36, 1/2-inch minimum coated with Buna-N, neoprene, nylon or Teflon or ASTM A320 316 stainless steel
Roller shafts	ASTM A320, stainless steel, Type 316
Hydraulic piping	ASTM A320, stainless steel, Type 316
Pneumatic tubing	ASTM A320, stainless steel, Type 316
Plows and sludge distribution equipment	ASTM A320, Type 316, stainless steel, coated as specified
Belt filter cloth	Monofilament polyester
Belt seam closures (for seamed belts)	ASTM A320, Type 316, stainless steel
Spray headers	ASTM A320, Type 316, stainless steel
Spray nozzles	ASTM 320, Type 316, stainless steel
Drainage pans	ASTM A320, Type 347L, 316L, stainless steel
Internal pressure piping	ASTM A320, stainless steel, Type 316
Drains	Schedule 80 PVC or ASTM 320, Type 316
Anchor bolts and miscellaneous hardware, including the bolts, nuts and washers	ASTM A320, Type 316 stainless steel
Mixing drum and head box	ASTM A320, Type 316L stainless steel

Component	Material
Control panels	ASTM A320, stainless steel, Type 316L

E. Materials specified are considered the minimum acceptable for the purposes of durability, strength, and resistance to erosion and corrosion. The Manufacturer may propose alternative materials for the purpose of providing greater strength or to meet required stress limitations. However, alternative materials must provide at least the same qualities as those specified for the purpose.

2.04 CORROSION PROTECTION

A. The ferrous metal and related components shall be protected by hot dip galvanizing. Hot-dip galvanizing shall be in accordance with ASTM A123 after fabrication. No cutting, welding, drilling, or punching will be permitted on any portion of the frame after galvanizing.

B. All pre-painted purchased equipment such as electrical motors, gear boxes, hydraulic/pneumatic cylinders etc., are to be painted with a Manufacturer's standard coating finish suitable for severe duty applications.

C. Control panel enclosures shall be NEMA 4X constructed of type 316L stainless steel. The inside of the enclosure shall be white.

2.05 EQUIPMENT

A. Frame:
   1. The press frame shall be designed to accommodate all operating and static loads with a factor of safety of not less than 5 and shall function without deflection, deformation, or vibration which will in any manner degrade performance of the equipment. No disassembled component shall weigh more than 4,000 pounds, and the frame design shall incorporate skids for even distribution of all loads to the supporting building structural system. Lifting lugs shall be provided, and access platforms shall be recommended to afford convenient access to maintenance points throughout the press. Splash guards shall be provided to confine all liquid to within the confines of the existing drain containment basin. Splash guards shall be designed to permit convenient access to all interior portions of the press for maintenance purposes.
   2. In their principal load bearing direction, no unsupported frame spans greater than 84 inches will be permitted. The structural design of all framing members shall limit deflection to no more than 1/480 of span. Design maximum stresses shall not exceed 20 percent of the material's yield strength. Upon completion of all fabrication work, all components of the press' framing system shall be coated in accordance with the requirements of paragraph 2.04.
   3. Frame shall have accurately machined and positioned seats for all bearings, arranged to ensure and maintain absolute alignment of all rotating elements under all loading conditions.
   4. Manufacturer shall provide recommendation for anchor bolt system for cast-in-place installation using Type 316 stainless steel.

B. Drainage:
   1. Drainage pans shall be provided under all dewatering and belt washing zones to contain all liquids and conduct this material to the drain sump to be incorporated into the machine's support base. The drainage pans, shields and piping shall be designed to confine all spray and splashed liquids and to conduct these to the sump. Drained connections shall be self-venting to prevent overflow. The main sludge inlet area shall include a high level overflow which shall discharge, through appropriate piping to the sump beneath the press. A NEMA 4X float switch shall be provided in the drainage pan. The switch shall be set to close when the sludge receptor area is near overflow elevation.

2. The low point of any drainage pan shall be provided with a connection for drain piping. Drainage piping shall be Schedule 80 PVC and shall be routed from each pan and shall terminate within the confines of the filtrate sump.
3. The drainage pans shall extend a minimum of 3-inches beyond the belt width on both sides and shall have a minimum 1-inch depth at any given point. The drainage pans shall be constructed of a minimum 14-gauge Type 316L stainless steel.

C. Belt Wash System:
1. Both dewatering belts shall be provided with a washing system consisting of piping, nozzles, drip pans, and spray containment shields as required to clean the area in contact with the sludge prior to returning to the pressing zones. The stainless steel nozzles shall be designed with a self-cleaning mechanism to provide cleaning action without disassembly or interruption of operation. Spray piping and nozzles shall be adequately braced and shall be of sufficient pressure rating to withstand pressure transients caused by sudden valve closures. All spray water shall be contained within the press enclosure.

D. Sludge Conditioning:
1. The press shall be provided with a sludge conditioning system designed specifically for polymer aided flocculation of anaerobically digested sludges. The system shall be configured to prevent floc breakup during transport to the gravity drainage section. The sludge conditioning device shall provide an appropriate, infinitely variable range of conditioning energies to assure economic flocculation of the sludge under all conditions.
2. The sludge conditioning system shall be mounted upstream of the press and shall consist of an in line, non-clog, variable orifice, venturi type mixer with a polymer injection ring. Static mixers with stationary baffles, modified check valves or mixers requiring electrical motors and controls, or tanks with mechanical mixers shall not be acceptable.
3. The sludge/polymer mixer assembly shall be Type 316L stainless steel with ANSI compatible flanges. The mixer assembly shall include an in-line polymer injection ring made of UHMW HDPE, flow splitting manifold, tubing and fittings between the injection ring and manifold. Each polymer injection ring shall inject polymer at a minimum of four points located 90 degrees apart around the circumference of the ring. The inside diameter of the ring shall not be less than 6-inches (diameter of the sludge feed piping).

E. Filtering Medium:
1. The filter belts shall be manufactured of a continuous weave of monofilament polyester wires. Filter belts may be of split type or continuous. Seams for split belts must be designed to fail before the belt, be repairable and facilitate replacement. The seam shall be designed to prevent interference with doctor blades or any other belt press equipment. Regardless of design, belts shall be suitable for convenient replacement by operating personnel.
2. Belt seam closures shall be of stainless steel. Each belt shall be heat set, and all belt edges shall be double reinforced with 1/2-inch plastic band. Belt edges that are heat sealed only will not be acceptable. Each belt shall be pre-stretched to limit elongation to less than three percent of the overall belt length. All belts, including separate high tension belts supplied as part of the machine, shall be capable of continuously withstanding a maximum tensile force of three times the maximum tension that the belt will be subjected to under normal operation.

F. Roller Assemblies:
1. Drum rollers, if provided, shall have one inch minimum diameter perforations spaced at not more than three inches. Scoop blades or similar devices shall be provided to extract filtrate from the center of the drum.

2. All rollers shall be designed for a maximum deflection of 0.05 inch at the center when under maximum loading. Maximum roller loading shall include roller mass forces and the tension forces resulting from the belt drive and belt tension. Belt tension shall be based upon not less than 200 pounds per inch of belt width and drive tension shall be calculated on the basis of a belt speed of not less than 15 feet per minute.
3. Non perforated rollers shall be constructed of ASTM A 36/A 36M or ASTM A 500 carbon steel and coated as specified hereinafter, or from Type 316 stainless steel, each with a continuous through shaft or with stub shafts supported by double, separated end plates, all welded in place. Stub shafts welded directly to single end plates are not acceptable. All welding shall be performed by qualified and certified welding operators in accordance with applicable AWS Standards. Minimum roller wall thickness shall be 1/2-inch. Perforated rollers shall be constructed of Type 316 stainless steel. Drive rollers, regardless of the material of construction shall be coated with a vulcanized rubber type coating. Drive rollers shall be provided with drainage channels or other suitable means to assist in the removal of water and prevent slippage.
4. All rollers shall be supported with heavy-duty bearings in sealed, splash proof enclosures. Bearings shall be self-aligning, roller or ball bearing type, in horizontally split cast-iron housings with triple labyrinth seals. Bearings shall be outboard mounted and field replaceable without affecting factory alignment or without major disassembly. Bearings shall have an AFBMA L-10 rating of 800,000 hours of operation based upon all forces and loads, including belt tension, roller mass and drive torque loads. Load calculations shall be based on both belts at a simultaneous belt tension of 50 pounds per lineal inch of belt and at a belt speed of 15 feet per minute.
5. Grease fittings shall be extended to the face of the press frame and shall be grouped in one location to facilitate maintenance operations. Bearings shall be re-greaseable while the press is running.

G. Belt Tracking and Tensioning Systems:
1. General:
   a. The press shall be provided with both tracking and tensioning systems to insure reliable operation. The belt tracking and tensioning system shall incorporate either hydraulic or pneumatic belt adjustments. All hydraulic piping or pneumatic tubing shall be rigidly and firmly anchored to the structural frame of the press. All lines shall be sized according to the intended use and operating pressure with a factor of safety of not less than 10.
   b. Hydraulic systems shall include all pumps, reservoirs, piping, and controls for system operation. The hydraulic power pack, including pump, reservoir and pressure controls, shall be located in a position which does not impede access to the press.
   c. Pneumatic systems shall include compressor, reservoir, drier, piping and controls necessary for system operation and providing the required air quality.
2. Belt Tracking System:
   a. Automatic sensing devices shall be provided to actuate the automatic belt tracking system and assure proper alignment of the belts at all times. The sensing devices shall continuously monitor the position of the belt, allowing the alignment roller to effect minor belt position adjustments continuously to maintain the belt properly positioned within the belt track. The belt tracking system shall be designed so that all belt position adjustments are performed smoothly without sharp, sudden movements of the filter belt or alignment roller. The belt tracking system shall be designed to minimize belt and roller wear and extend the working life of the filter belts.
   b. NEMA 4X limit switches shall be provided to detect malfunctioning of the tracking system. The switches shall be designed to detect gross belt misalignment and shall open to indicate belt misalignment, initiate a shutdown signal, and activate a remote alarm.
3. Belt Tensioning Assembly:
   a. A hydraulically or pneumatically adjusted belt tensioning assembly shall be provided. Belt tension adjustment shall be through cylinder actuators for hydraulic systems or bellows

actuators for pneumatic systems acting on the take-up roller hubs. Bellows type actuators shall be self-aligning type, designed for a working pressure of 150 psig. Tension adjustment devices acting on the center of the roller will not be permitted. Means shall be provided to maintain roller alignment and provide even tension throughout the width of the belt. Belt tension shall be variable and tension adjustment shall be possible while the machine is in operation. Either system shall maintain a constant tension on the belt regardless of cake thickness. A pressure gage or similar device shall be provided to indicate actual belt tension, and normal operating limits shall be indicated on the face of the gage. The belt tensioning system shall be designed to ensure simultaneous and parallel movement of the tensioning roller ends during adjustment and to accommodate at least 3 percent increase in belt length. Belt tension shall be infinitely variable and shall be adjustable without shutdown of the machine.

4. Pneumatic System:
   a. Provide the main control air inlet to each press with a combination filter regulator lubricator with input and output gages, and a suitable pressure switch with D.P.D.T. contacts rated 10 amperes at 120 volts in a NEMA 4X enclosure to activate an alarm on low control air pressure.
   b. Furnish one air compressor assembly to provide an air supply to the belt filter press sludge dewatering machines.
      1) Air compressor assembly shall consist of two motor driven air compressors (one is standby), inlet filter silencer, intercooler with drain, after-cooler with automatic condensate trap, air receiver with gage, safety valve, and automatic condensate trap, control system, and all interconnecting piping and wiring. All equipment shall be assembled on a rigid steel frame or base or on support legs, ready for mounting on a concrete equipment pad foundation.
      2) Compressors shall be two-stage, air-cooled, heavy-duty type, designed for continuous service. Compressor piston displacement and actual delivery shall be as required to operate the belt filter press tensioning systems and maintaining a pressure of 150 psi. Compressor motors shall be totally enclosed, fan cooled motor with Class F insulation, suitable for operation on 460 volt, 3 phase, 60 Hz power. Space heaters, 120 volt single phase, shall be placed in each motor frame.
      3) Power shall be transmitted from the motor to the compressor by a V belt drive, consisting of compressor and motor sheaves, belts, and drive guard. Means shall be provided to adjust belt tension. Provide a starting unloader.
      4) Provide a suitable dry type filter silencer on the compressor suction.
      5) Furnish an air cooled intercooler to remove the heat of compression between stages. Furnish with a drain for the removal of condensate.
      6) Provide an after-cooler. The after-cooler shall be of the air cooled type capable of cooling the compressed air to within 20 degrees of the ambient air temperature and furnished with an automatic condensate trap.
      7) Assembly shall include one horizontal air receiver of ASME Code construction with a capacity determined by the belt filter press supplier. Receiver shall be complete with pressure gage, safety valve, outlet connections, drain connection, automatic condensate trap, and inspection openings.
      8) Compressor Controls:
         a) Provide fully automatic controls to maintain air receiver pressure within preset limits. Use a single dual setpoint pressure switch with an adjustable setpoint range between 75 and 150 psi to accomplish this control. Control setpoints for the switch shall be 100 psi at the low limit and 115 psi at the high limit. A second low pressure switch shall be set at 95 psi to activate an alarm output signal.
         b) Pressure switches shall consist of a diaphragm piston pressure transducer and a precision switch. Piston backed by a cylinder disc to permit 10 times over-range

pressure without affecting calibration. Range spring and piston shall be isolated from process fluids by the diaphragm. Switch provided with two 3/4-inch conduit connections. Switch assembly housing shall be cast aluminum rated types 3, 4, and 7D per NEMA ICS6. Select pressure transducer so that set point falls between 30 and 70 percent of maximum range. Repeatability and sensitivity shall be 1.0 percent of operating range. Unless otherwise specified, switches nonadjustable dead band type.

c) Provide a level switch in the lube oil crankcase to activate a low level alarm output signal.

9) Local Controls:
   a) Furnish a mushroom head emergency stop push button. The device shall have a separate manual reset.

10) Controls
   a) Equipment described herein shall be contained within the belt filter press control panel.
   b) Two combination circuit breaker/magnetic across the line motor starters with 120 volt control circuits for the compressor motors. Each starter shall have three thermal overload relays of the melting alloy type. Each starter shall be provided with a normally closed starter contact for control of the space heater furnished with the motor.
   c) Control logic shall be provided for OWNER to program within plant SCADA system.

5. Hydraulic System
   a. Each hydraulic system (one for each press) shall include hydraulic pump and motor, reservoir with sight glass, filters, valves, gages, piping, and controls required for system operation. Provide a suitable pressure switch in a NEMA 4X enclosure to activate an alarm on low hydraulic fluid pressure. The hydraulic system shall be designed for location up to 25 feet remote from the belt filter press or may be incorporated in belt press framework.
   b. The hydraulic pump motor shall be totally enclosed, fan cooled motor with Class F insulation, suitable for operation on 460 volt, 3 phase, 60 Hz power. Space heaters, 120 volt single phase, shall be placed in each motor frame.
   c. Hydraulic system components shall be mounted on a rigid common baseplate suitable for floor or wall mounting if remotely located. Baseplate shall be stainless steel.
   d. Controls
      1) Equipment described herein shall be contained within the belt filter press control panel.
      2) Two combination circuit breaker/magnetic across the line motor starters with 120 volt control circuits for the pump motors. Each starter shall have three thermal overload relays of the melting alloy type. Each starter shall be provided with a normally closed starter contact for control of the space heater furnished with the motor.
      3) Control logic shall be provided for OWNER to program within plant SCADA system.

H. Gravity Dewatering Section:
   1. The gravity dewatering zone shall accept flocculated sludge from the sludge conditioning system, and permit the free water contained within the conditioned sludge to readily separate from the sludge and drain to a collection pan.
   2. The gravity drainage section shall be furnished with a sludge inlet assembly consisting of a distribution chute and leveling weir designed to evenly distribute the conditioned sludge across the entire effective width of the moving filter belt. The materials in contact with the sludge in the distribution area shall be Type 316L stainless steel with a minimum thickness of 14-gauge.
   3. The conditioned sludge shall be contained on the belt with adjustable containment barriers equipped with replaceable rubber seals to prevent leakage. The containment barriers shall be constructed of minimum 14-gauge Type 316L stainless steel, and shall be mounted on both sides of the belt and at the sludge feed end of the gravity section. The side skirts shall be equipped with

urethane seals or other elasticized materials to prevent spillage of sludge. The replaceable rubber seals shall be attached to the containment barriers with a friction fit.

4. The gravity drainage section shall be furnished with chicanes (plows) to adequately furrow the conditioned sludge to promote drainage of water from the sludge. All surfaces of chicanes and other devices contacting the filter cloth shall be coated with teflon or similar smooth material to prevent rapid deterioration of the belt surface. Each row of chicanes shall be provided with a single lifting handle, designed to remove the entire row of chicanes at least 6- inches from the belt, out of the sludge flow, to facilitate cleaning. Chicanes shall be designed to be individually adjustable laterally and shall pivot to allow them to pass over obstructions on the belt. Each set of chicanes shall be mounted on a Type 316L stainless steel horizontal support bar.
5. The gravity dewatering belt shall be supported to minimize belt sagging by either a grid, or a plate designed to minimize belt wear and facilitate free drainage of filtrate. The support shall be minimum 2-inches wider than the belt on each side. Wear strips, if used, shall be replaceable without removing or disassembling the gravity section sidewalls and chicane assemblies.

I. Wedge Compression Section:
   1. Following the gravity drainage section, the sludge shall enter a low pressure section where converging belts shall exert continuously increasing pressure. Means shall be provided to adjust the angle of convergence while the press is in operation to permit operators to optimize dewatering operations. Containment seals shall be provided on both sides of the wedge compression section to prevent sludge from escaping. The wedge compression section shall be configured to permit liquid to escape through both belts.

J. Roll Pressurization Section:
   1. Following the wedge compression section, the sludge shall enter a dewatering section of increasingly greater pressure, where the two belts pass sequentially over series of rollers of decreasing diameter. The roller diameters and belt tensioning system, in combination, shall exert increasingly greater pressure as liquid is removed from the sludge, thereby effecting efficient dewatering, yet assuring efficient capture of solids.

K. Scraper Blades and Discharge Chute:
   1. Replaceable scraper blades shall be provided to efficiently separate dewatered cake from the belt. A discharge chute shall be provided to conduct the cake to the middle of the belt conveyor for removal. The scraper blade shall be mounted opposite a belt roller to insure efficient cake removal. The pressure exerted by the scraper blade against the belt shall be adjustable while the press is in operation. Adjustable weights on lever arms will not be an acceptable means of providing this feature. Operation of the doctor blades shall be in such a manner as to minimize wear to the belt seam.
   2. Doctor blades shall have springs or counterweights to maintain pressure against the belts, constructed of rubber, plastic or fiberglass reinforced plastic, readily removable and positioned on each belt at the discharge end of the machine to effectively remove sludge cake from the belts. All springs and hardware shall be of stainless steel. A lifting device shall permit movement of the blades away from the belts for cleaning, all without machine shutdown.

L. Electrical:
   1. All conduits shall be Schedule 40 PVC, standard weight galvanized conduit with PVC coating, or standard weight conduit coated and lined with fusion applied epoxy in accordance with paragraph 2.04. Limit switches, float switches, and all other electrical devices shall be NEMA 4X enclosures with contact rated not less than NEMA A300. Conduit shall be routed to be protected by belt press frame where possible.

2. All switches and other 120 volt devices shall be wired in conduit to a labeled, gasketed, NEMA 4X junction box located on the press frame. The junction box shall include terminal blocks for interface of all factory-wired devices with the instrumentation and controls specified in herein.
3. A mushroom head emergency stop push button station or emergency lanyard shall be provided on each side of the machine. The device shall have a separate manual reset.
4. Each belt filter press unit shall be provided with a nylon "pull cord" on both sides in ring supports to provide emergency shutdown of all belt filter press motors and appurtenant equipment. Trip switch contacts shall be D.P.D.T. rated 10 amperes at 120 volts.

M. Drive Unit:
1. The belts and rollers shall be driven by a variable frequency drive unit to achieve infinitely and uniformly variable speed adjustment while the press is in operation through manual adjustment of a control device located on the control panel. The variable frequency device, complete with 1:1 isolation transformer, shall be provided separately by the belt press manufacturer for installation in the motor control lineup specified.
2. Drive motors shall be rated for inverter duty, variable frequency service designed for the bilt drive purpose and rated as premium efficient motors. Motors shall have totally enclosed fan cooled (TEFC) enclosure. Motors shall be rated at 150% nameplate horsepower of the required horsepower maximum service condition. Provide motor speed indicator readout for in the main press control panel for all drives. Variable frequency drives for shall be furnished within the press control panel.
3. All portions of the drive unit shall be totally enclosed with all gearing running in oil or grease lubricated and all drive chains and sprockets completely enclosed in a permanently greased housing.
4. Speed Reducer: The speed reducers shall be AC motor driven, helical shaft mounted gear reducers, with a 1.15 service factor. Worm gear reducers shall not be acceptable. The speed reducer housing shall be cast iron or fabricated steel welded construction and shall be totally enclosed, dustproof, and oil tight. Speed reducers shall be rated for minimum AGMA Class II service.
5. Drive Controller: The drive motors shall be controlled by a single variable frequency drive. The variable frequency drive controller shall provide 0 – 460 VAC, 2 – 60 Hz output capable of driving the belt at from 3 to 15 feet per minute.

N. Washwater Booster Pump
1. If belt filter press washwater system requires higher pressure than that specified in paragraph 1.01.F the belt filter press manufacturer shall provide a pump for each press capable of boosting the pressure to the required level.
2. Pumps shall be installed remotely in relation to the belt filter press. Pump shall not be incorporated into the belt fitler press frame.
3. Pumps shall be horizontal, end suction, frame mounted, centrifugal pumps. Frame mounted shall mean foot mounted volute.
4. Pump shall provide the required flow and pressure while operating in accordance with the Test Standards of the Hydraulic Institute.
5. The pump shall be designed to operate without cavitation and the motor and pump combination shall operate without vibration over the specified range of conditions. The pump head capacity curve shall slope in one continuous curve with no point of reverse slope inflection.
6. All components shall be designed to safely withstand forces resulting from flow reversals up to 125 percent of maximum speed within the pump during shutdowns caused by power failure.
7. The complete pumping unit shall be designed to operate without overload on any component at any point along the pump's entire operating curve.
8. Pump construction shall be per the following:
   a. Casing - ASTM A48, Class 30

   b. Impeller – Cast bronze, ASTM B584
   c. Wearing Rings – Cast bronze, ASTM B584
   d. Shaft - Stainless steel: ASTM A276, Type 304 or 316; ASTM A582, Type 303 or 416
9. Casing shall be cast iron construction, threaded or flanged through bolt pipe connection, vertically split case design, with replaceable bronze case wear rings, tapped gage openings on suction and discharge nozzles on flanged connection, and watertight mechanical seals. Venting petcock shall be provided at high point of volute. Casing shall be foot mounted. Pump mounting via foot support of the bearing frame only in lieu of the casing foot is not acceptable.
10. Impeller shall be bronze, enclosed, single suction type, static and dynamically balanced, and trimmed to meet specified conditions. Impeller shall be less than 85 percent of largest cutwater diameter accommodated in volute.
11. Shaft shall be stress-proof stainless steel, precision ground oversized to carry radial and axial thrust.
12. Bearings shall be grease lubricated and shall have a minimum ABMA L-10 rating life of 50,000 hours.
13. Couplings shall be flexible heavy-duty type suitable for start-stop operation and provided with OSHA approved removable stop guard.
14. Base shall be either heavy-duty cast iron construction reinforced against deflection, with integral drip rim, IPS drain connection and grout holes; or formed steel channel type without drip rim.
15. Single mechanical seals shall be split mechanical seals requiring no field assembly, other than assembly around the shaft and insertion into the pump. They shall be self-aligning, and self-centering, single seals. They shall be of a nondestructive (non-fretting) type requiring no wearing sleeve for the shaft. Metal parts shall be Type 316 or 316L stainless steel. Springs shall be Hastelloy C, Elgiloy, or other Duplex SS selected for resistance to chloride attack. Rotary faces shall be silicon carbide or chrome oxide. Stationary faces shall be silicon carbide for solids bearing fluid service and carbon for clean water service. Elastomers shall be ethylene propylene or fluorocarbon. Mechanical seals shall be suitable for operation between full vacuum (0 psia) up to 200 percent of the maximum specified operating pressure, but in any event not less than 200 psig. Pumps shall have volute connected flush water with cartridge filter for seal face cooling and circulation.

O. Controls
1. Belt filter press system will be controlled from the existing SCADA system. Belt filter press equipment manufacturer shall provide control description and I/O list that will be installed in the SCADA system by a third party. Control information submitted shall incorporate control of all systems provided by belt filter press supplier including, belt filter press, washwater booster pump (if provided), hydraulic system (if provided) or pneumatic system (if provided). Belt filter press supplier shall also provide the control panels described herein.
2. A common main control panel for both belt filter presses shall be supplied with a NEMA 4X stainless steel freestanding control panel accepting 460 VAC, 60 hertz, 3-phase power and contain the following. Main control components shall consist of; variable frequency drive controller with short-circuit and overload protection for main belt drive, motor starters with short-circuit and overload protection for hydraulic pump and wash water booster pump if required. Terminal landing strip shall be provided for control components and connection to existing SCADA system.
3. Each belt filter press shall be supplied with a local control panel rated for NEMA 4X and constructed of stainless steel that shall be freestanding. Panel will be located locally to the belt filter presses and shall contain push buttons required for maintenance which included extending and retracting the belt tensioning system and forward and reversing direction of belt movement.
4. The main control panel shall be completely pre-wired and factory tested prior to shipment.
   a. Motor Starters

Motor starters shall be full voltage, non-reversing, IEC style across the line units. Coils shall be 120 VAC. The starters shall be Allen Bradley style 140Mw/100 contactors.

b. Speed Controllers
The speed controllers shall be capable of outputting a 4-20ma DC or 0-10v DC setpoint control signal and accept a 4-20ma DC or 0-10v DC status signal. The controller shall be capable of PID control. The controller shall be Red Lion P48 or equal.

c. Pushbuttons
All pushbuttons shall be heavy duty, oil tight/watertight, corrosion resistant units rated for NEMA 4X service. Contact blocks shall be rated for 10-ampere continuous service. Pushbuttons shall be Allen Bradley, type 800 H or equal.

d. Pilot Lights
Pilot lights shall be heavy duty, oil tight/watertight, corrosion resistant units rated for NEMA 4X service. Units shall be 120 VAC transformer type. Pilot lights shall be Allen Bradley, type 800 H or equal.

e. Terminal Blocks
Terminal blocks shall be high density, spring cage clamp style, with 600 volt rating. Terminal blocks shall be Wago, Class 280, or equal.

f. Variable Frequency Drive
The VFD shall be UL listed and shall be Allen Bradley Powerflex 400 style or equal.

2.06 SPARE PARTS

A. One set of any tools required for servicing belt filter presses shall be provided. In addition, the following spare parts shall be provided:
   1. Two complete sets, replacement belts (The belts shall not be provided until a period of time after start up, to allow evaluation of performance of the installed belts.)
   2. Two complete sets of doctor blades including all fasteners, brackets and appurtenances necessary for mounting on the press frame
   3. Cams, if used, for doctor blades
   4. Gravity, wedge and shower box seals
   5. One complete set, water spray nozzles
   6. One bearing of each size and type used on each machine and subassembly
   7. One complete set, all belt positioning and tensioning devices

B. Spare parts shall be protected, labeled, and boxed. Special tools shall be Proto, or equal, with the name of the Owner engraved on each. Tools shall be furnished in a painted metal mechanic's toolbox fitted with a lock hasp. The words "Belt Filter Press Tools" and the name of the Owner shall be neatly stenciled on the cover.

C. Manufacturer shall furnish a list of additional recommended spare parts for an operating period of one year. This list shall describe each part, the quantity recommended, and the unit price of the part.

D. Furnish oil and grease required for initial operation. Products shall be as recommended by the manufacturer.

PART 3 EXECUTION

3.01 GENERAL

A. Belt filter presses shall be completely factory assembled. Erection shall require only bolting to the foundation and connection of external piping and wiring.

3.02 FIELD TESTING AND NONCOMPLIANCE PENALTIES

A. Functional test:
   1. Perform functional testing for each belt filter press installed.
   2. Prior to system start-up, system components shall be inspected for proper alignment, proper connection, and satisfactory operation.
   3. Manufacturer's representative shall inspect installation, check for lubrication and minor adjustments, provide certification that system components have been installed correctly and are ready for operation. Notify Buyer and Engineer prior to demonstrating machine operability.
   4. Demonstrate machine is operable by successfully running for two consecutive 8 hour days without mechanical, electrical, or control-induced malfunction.

B. Initial Performance test:
   1. Performance test shall not begin until functional testing has been completed to Buyer's and Engineer's satisfaction.
   2. After start-up, manufacturer shall conduct a performance test using Buyer's sludge to determine actual system operating conditions and verify that unit meets minimum requirements specified herein.
   3. Prior to performance tests, manufacturer shall perform optimization testing as necessary to determine and recommend most effective type of polymer to produce specified performance.
   4. Buyer shall provide sludge feed, water, electrical power, and sludge cake disposal necessary to conduct performance tests. Polymers required shall be provided by Buyer at recommendation of manufacturer.
   5. Cost of laboratory testing necessary to confirm centrifuge performance for initial test shall be borne by Buyer.
   6. If, after a minimum of five 7-hour test runs, with 3 rounds of sampling per run in opinion of Buyer, system meets minimum performance requirements specified herein and the supply sludge was within the specified operating ranges of the same paragraph, Engineer will recommend, by letter, that the press met initial performance testing requirements and authorizes extended performance testing.
   7. If, in opinion of Engineer, performance test results do not meet requirements specified herein and the supply sludge was within the specified operating ranges of the same paragraph, Engineer will notify Buyer and Seller of failure of the initial performance testing.
   8. In case of nonacceptable performance, manufacturer shall then have 30 days in which to perform at its sole expense, supplemental testing, equipment adjustments, changes or additions and to perform retest of nonacceptable system.

C. Extended Performance Testing
   1. Extended Performance Testing shall not begin until initial performance test has been completed to Buyer's and Engineer's satisfaction.
   2. Extended performance testing shall consist of a 60 day performance period where manufacturer-trained Buyer staff operate the belt filter press utilizing the coagulant and polymer combination utilized in the initial performance testing.
   3. Buyer will make daily measurements of belt filter press performance – coagulant and polymer consumption, power use, influent solids characteristics, dewatered sludge cake solids concentration, solids capture, and average daily throughput. Results will periodically be communicated to the equipment manufacturer.
   4. Buyer will also evaluate equipment operability and reliability during this performance period.
   5. Equipment manufacturer has the right to provide a representative onsite during the testing period to observe the equipment performance and operator activities.
   6. Extended performance testing results will be reviewed by the Buyer and Engineer to determine:
      a. Belt filter press has met the specified performance requirements

b. Belt filter press has demonstrated its operability and reliability.
Results will be shared with equipment manufacturer.

7. If the extended performance test results are acceptable, Engineer will recommend, by letter, official acceptance of belt filter press.
8. If, in opinion of Engineer, performance test results do not meet requirements specified herein, Engineer will notify Buyer and Seller of nonacceptable performance.
9. In case of nonacceptable performance, manufacturer shall then have 30 days in which to perform at its sole expense, supplemental testing, equipment adjustments, changes or additions including piping and chemical feed points, and to perform extended performance retest of nonacceptable system.

D. After retesting, should the equipment fail to meet the minimum specified performance requirements the equipment will be rejected. Seller shall replace the failed equipment with different model units appropriate for meeting specified performance at no additional cost to Buyer. As an alternative Seller may elect to remove their failed equipment, provide full refund of the cost of the equipment to the Buyer and pay a penalty in the amount of 25% to assist Buyer in obtaining and installing alternate equipment. Failure to achieve specified performance criteria upon retesting shall constitute the basis for the Owner to seize the performance bond specified under paragraph 1.02 Extended Limited Warranty.

3.03 OPERATIONAL INSTRUCTIONS AND TRAINING

A. Provide training per Section V.

B. Upon completion of training, submit certification Form B provided at the end of this section.

3.04 SUPPLIER OR MANUFACTURER INSPECTION AND AFFIDAVIT

A. Furnished one or more experienced Service Engineers experienced in installation, adjustment, and start up per Section V.

B. Upon completed installation, acceptable performance testing, and completion of Owner's training, submit a signed affidavit certifying that the supplier or Manufacturer has observed and accepts that all stages of construction, installation, testing, and training have been adequately performed. The affidavit shall conform to the form and style of Form C provided at the end of this section.

C. Provision of the inspection, approval, and affidavit by the belt filter press supplier or Manufacturer shall in no way relieve the Manufacturer of any responsibilities or requirements of this contract, including system installation, testing, commissioning, and the guarantee specified in paragraph 1.02 Extended Limited Warranty.

Form A. UNIT RESPONSIBILITY CERTIFICATION FORM

CITY OF IOWA CITY

CERTIFICATE OF UNIT RESPONSIBILITY

FOR SPECIFICATION SECTION 46 76 21

BELT FILTER PRESSES

The undersigned manufacturer of driven equipment ("manufacturer") accepts unit responsibility for all components of equipment furnished to the Project under specification Section_____ ,_and for related equipment manufactured under sections_____, _____, and _____ .

We have reviewed the requirements for this section, including but not limited to drivers, supports for driving and driven equipment and all other specified appurtenances to be furnished to the Project by manufacturer. And, we have further reviewed, and modified as necessary, the requirements for associated variable speed drives and motor control centers. We hereby certify that all specified components are compatible and comprise a functional unit suitable for the specified performance and design requirements whether or not the equipment was furnished by us. We will make no claim nor establish any condition that problems in operation for the product provided under this specification Section _____ are due to incompatibility of any components covered by this Certificate of Unit Responsibility. Nor will we condition or void any warranty for the performance of the product of this specification Section _____ due to incompatibility of any components covered under this Certificate of Unit Responsibility.

Our signature on this Certificate of Unit Responsibility does not obligate us to take responsibility for, nor to warrant the workmanship, quality, or performance of related equipment provided by others under specification sections _____, _____, and _____. Our obligation to warranty all equipment provided by us shall remain unaffected.

Notary Public	Name of Corporation
Commission expiration date	Address
Seal:	By:
	Duly Authorized Official
	Legal Title of Official
	Date

Form B. MANUFACTURER'S INSTRUCTION CERTIFICATION FORM

Contract No:	Specification Section:
Equipment name:	
Contractor:	
Manufacturer of equipment item:	

The undersigned manufacturer certifies that a service engineer has instructed the wastewater treatment plant operating personnel in the proper maintenance and operation of the equipment designated herein.

Operations Check List (check appropriate spaces)	
Start-up procedure reviewed	
Shutdown procedure reviewed	
Normal operation procedure reviewed	
Others:	

Maintenance Check List (check appropriate spaces)	
Described normal oil changes (frequency)	
Described special tools required	
Described normal items to be reviewed for wear	
Described preventive maintenance instructions	
Described greasing frequency	
Others:	

Manufacturer	Signature of Contractor Representative Date
Signature of Authorized Representative	
Date	Signature of Authorized Representative Date

Form C. MANUFACTURER'S INSTALLATION CERTIFICATION FORM

Contract No:	Specification section:
Equipment name:	
Contractor:	
Manufacturer of equipment item:	

The undersigned manufacturer of the equipment item described above hereby certifies that he has checked the installation of the equipment and that the equipment, as specified in the project manual, has been provided in accordance with the manufacturer's recommendations, and that the trial operation of the equipment item has been satisfactory.

Comments:

Manufacturer	Contractor
Signature of Authorized Representative	Signature of Authorized Representative
Date	Date

SECTION IV. OPERATING AND MAINTENANCE DATA

GENERAL

1.01 OPERATING AND MAINTENANCE DATA REQUIREMENTS

A. Operating and maintenance data shall be in English language.

B. Compile product data and related information appropriate for Buyer's maintenance and operation of products furnished under Agreement.

C. Prepare operating and maintenance data as specified in this section and as referenced in other pertinent sections of Specifications.

D. Instruct Buyer's personnel in maintenance of products and in operation of equipment and systems.

1.02 QUALITY ASSURANCE

A. Preparation of data shall be done by personnel:
   1. Trained and experienced in maintenance and operation of described products.
   2. Familiar with requirements of this section.
   3. Skilled as technical writers to extent required to communicate essential data.
   4. Skilled as draftsmen competent to prepare required drawings.

1.03 FORM OF SUBMITTALS

A. Prepare data in form of an instructional manual for use by Buyer's personnel.

B. Format:
   1. Sheet size: 8-1/2" x 11" minimum.
   2. Paper: 20 lb minimum, white, for typed pages.
   3. Text: Manufacturer's printed data, or neatly typewritten.
   4. Drawings:
      a. Provide reinforced punched binder tab, bind in with text.
      b. Larger size drawings shall be folded to 8-1/2” x 11”, and inserted into pockets.
   5. Provide fly-leaf for each separate product, or each piece of operating equipment.
      a. Provide typed description of product, and major component parts of equipment.
      b. Provide indexed tabs.
   6. Cover: Identify each volume with typed or printed title "OPERATING AND MAINTENANCE INSTRUCTIONS." List:
      a. Title of Project.
      b. Identity of separate structure as applicable.
      c. Identity of general subject matter covered in manual.
   7. Binders:
      a. Commercial quality 3-ring binders with durable and cleanable plastic covers.
      b. Maximum ring size: 1".
      c. When multiple binders are used, correlate data into related consistent groupings.

1.04 CONTENT OF MANUAL

A. Neatly typewritten table of contents for each volume, arranged in systematic order.
   1. Contractor, name of responsible principal, address, and telephone number.
   2. List of each product required to be included, indexed to content of volume.

3. List, with each product, name, address, and telephone number of:
   a. Subcontractor or installer.
   b. Maintenance contractor, as appropriate.
   c. Identify area of responsibility of each.
   d. Local source of supply for parts and replacement and list of recommended spare parts.
4. Identify each product by product name and other identifying symbols as set forth in Contract Documents, including nameplate information and shop order numbers for each item of equipment furnished.

B. Product data:
1. Include only those sheets which are pertinent to specific product.
2. Annotate each sheet to:
   a. Clearly identify specific product or part installed.
   b. Clearly identify data applicable to installation.
   c. Delete references to inapplicable information.

C. Drawings:
1. Supplement product data with Drawings as necessary to clearly illustrate:
   a. Relations of component parts of equipment and systems.
   b. Control and flow diagrams.
2. Coordinate Drawings with information in Project record documents to assure correct illustration of completed installation.
3. Do not use Project record documents as maintenance Drawings.

D. Written text, as required to supplement product data for particular installation.
1. Organize in consistent format under separate headings for different procedures.
2. Provide logical sequence of instructions for each procedure.

E. Copy of each warranty, Bond, and service contract issued.
1. Provide information sheet for Owner's personnel, giving:
   a. Proper procedures in event of failure.
   b. Instances which might affect validity of warranties or Bonds.

1.05 MANUAL FOR EQUIPMENT AND SYSTEMS

A. Submit 3 copies of complete manual in final form and electronic copy in both Word and pdf format.

B. Contents, for each unit of equipment and system, as appropriate:
1. Description of unit and component parts:
   a. Function, normal operating characteristics, and limiting conditions.
   b. Performance curves, engineering data, and tests.
   c. Complete nomenclature and commercial number of replaceable parts.
2. Operating procedures:
   a. Startup, break-in, routine, and normal operating instructions.
   b. Regulation, control, stopping, shutdown, and emergency instructions.
   c. Summer and winter operating instructions.
   d. Special operating instructions.
3. Maintenance procedures:
   a. Routine operations.
   b. Guide to "trouble-shooting."
   c. Disassembly, repair, and reassembly.
   d. Alignment, adjusting, and checking.
4. Servicing and lubrication schedule: List of lubricants required.

5. Manufacturer's printed operating and maintenance instructions.
6. Description of sequence of operation by control manufacturer.
7. Original manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance.
    a. Predicted life of parts subject to wear.
    b. Items recommended to be stocked as spare parts.
8. As-installed control diagrams by controls manufacturer.
9. Each contractor's coordination Drawings. As-installed color-coded piping diagrams.
10. Chart of valve tag numbers, with location and function of each valve.
11. List of original manufacturer's spare parts, manufacturer's current prices, and recommended quantities to be maintained in storage.
12. Other data as required under pertinent sections of Specifications.

C. Content, for each electrical and electronic system, as appropriate.
1. Description of system and component parts:
    a. Function, normal operating characteristics, and limiting conditions.
    b. Performance curves, engineering data, and tests.
    c. Complete nomenclature and commercial number of replacement parts.
2. Circuit directories of panel boards:
    a. Electrical service.
    b. Controls.
    c. Communications.
3. As-installed color-coded wiring diagrams.
4. Operating procedures:
    a. Routine and normal operating instructions.
    b. Sequences required.
    c. Special operating instructions.
5. Maintenance procedures:
    a. Routine operations.
    b. Guide to "trouble-shooting."
    c. Disassembly, repair, and assembly.
    d. Adjustment and checking.
6. Manufacturer's printed operating and maintenance instructions.
7. List of original manufacturer's spare parts, manufacturer's current prices, and recommended quantities to be maintained in storage.
8. Other data as required under pertinent sections of Specifications.

D. Prepare and include additional data when need for such data becomes apparent during instruction of Owner's personnel.

1.06 SUBMITTAL SCHEDULE

A. Preliminary draft:
1. Submit 2 electronic copies to Engineer and Buyer a minimum of 30 days in advance of when equipment is scheduled to be shipped to Buyer’s site.
2. Provide 1 copy shipped with equipment.

B. Submit 1 copy of completed data in final form 15 days prior to final inspection or acceptance. Copy will be returned after final inspection or acceptance, with comments.

C. Submit specified copies of approved data in final form 10 days after receipt of comments.

1.07 DEMONSTRATION AND INSTRUCTION OF OWNER'S PERSONNEL

A. Demonstrate operation and maintenance of products to Buyer's personnel prior to date for Buyer's personnel taking over operation of the equipment.

B. Demonstrate Project equipment and instruct in a classroom environment onsite by a qualified manufacturer's representative who is knowledgeable about the Project.

C. Utilize operation and maintenance manuals as basis for instruction. Review contents of manual with Buyer's personnel in detail to explain all aspects of operation and maintenance.

D. Demonstrate start-up, operation, control, adjustment, trouble-shooting, servicing, maintenance, and shutdown of each item of equipment at agreed time, at equipment location.

E. Prepare and insert additional data in operations and maintenance manuals when need for additional data becomes apparent during instruction.

F. Amount of time required for instruction on each item of equipment and system is that specified in individual sections.

PRODUCTS

NOT USED

EXECUTION

OPERATING AND MAINTENANCE MANUAL COVER DIAGRAM

1. **Imprinting shall be in Arial font.**
2. **Spine printing shall be 12-point.**
3. **Cover printing shall be in point sizes indicated.**

* **If more than one volume is necessary, imprint cover with volume numbers.**

SPINE

CITY OF IOWA CITY
(36pt)

BELT FILTER PRESS
(36pt)

COVER

CITY OF IOWA CITY
(36pt)

OPERATING AND MAINTENANCE MANUAL
FOR
BELT FILTER OPERATION
(36pt)

MANUFACTURER'S NAME
MANUFACTURER'S ADDRESS
(24PT)

STANLEYCONSULTANTS, INC.
MUSCATINE, IOWA
(14PT)

SECTION V. MANUFACTURER'S FIELD SERVICES

GENERAL

1.01 SERVICE ENGINEER RESPONSIBILITIES

A. Seller shall provide qualified Service Engineer(s), as necessary to:
   1. Instruct and advise Buyer and Buyer's installing contractor regarding proper method for unloading, erecting, and installing equipment to ensure installation in accordance with manufacturer's instructions.
   2. Supervise assembly of equipment.
   3. Ensure that alignment and clearances of equipment are checked and adjusted to allowable tolerances.
   4. Inspect completed installation to ensure apparatus is in operating condition, making such detailed checks of equipment installation as are necessary to ascertain that equipment is assembled, installed, aligned, connected, lubricated, and prepared for operation in accordance with manufacturer's instructions and recommendations.
   5. Review and accept the construction of the belt filter press installation at the following stages:
      a. When press has been correctly installed in the manner and to the tolerances prescribed by the belt filter press Manufacturer for correct performance.
      b. When press installation has been satisfactorily tested to the levels of performance necessary to meet the requirements of these specifications.
      c. When Buyer's training has been satisfactorily completed.
   6. Check connections to equipment and adjust, or supervise adjustment of, control and indicating devices after equipment has been installed and connected.
   7. Provide Engineer with duplicate copies of final alignment and clearance measurements on all rotating or reciprocating equipment. Measurements shall clearly identify each piece of equipment.
   8. Supervise preliminary operation of equipment and necessary adjustments.
   9. Provide the services of factory trained instructors for the purpose of training the Buyer's personnel in the proper operation and maintenance of the equipment. The instruction work shall consist of not less than 40 hours of classroom and hands-on field training. Subjects shall include the following:
      a. Start-up procedures
      b. Shutdown procedures
      c. Troubleshooting
      d. Selection of proper polymer types and dosages
      e. Replacement of dewatering belts
      f. Operating adjustments for performance optimization
      g. Preventive maintenance
      h. Maintenance procedures
      i. Emergency procedures
      j. Records keeping

      The Manufacturer shall submit a course outline, along with proposed class materials, for review by the Buyer and Engineer at least 30 days prior to the training.

B. Presence of Service Engineer will in no way relieve Seller of any responsibility assumed under Agreement.

C. Work and abilities of Service Engineer shall be subject to review of Engineer. If Engineer determines that any Service Engineer is not properly qualified, Seller shall replace Service Engineer upon written notification by Engineer.

D. Seller shall provide continuity in assignment of Service Engineer to Work. In event substitution of Service Engineer is made which is not at request of Engineer, substitute's time for "familiarization" shall be at Seller's expense.

E. Seller shall be responsible for multiple trips and associated expenses including labor necessary to fulfill Service Engineer's responsibilities during equipment installation, adjustment, checkout, testing, and training through final acceptance.

F. If any of Service Engineer's time spent at site or if any of his trips to site are required to make corrections to equipment supplied under Agreement resulting from defective design, material or workmanship used in manufacture of equipment, such time and trips will be at Seller's expense and will not be counted against number of working days or trips specified, nor will unit prices apply.

G. Seller shall provide two additional trips by qualified Service Engineer to provide up to 6 hours of onsite service per trip under its base proposal pricing. Trips shall be performed at 6 months and 12 months from final acceptance to assist owner in troubleshooting, maintenance, operational adjustments, and additional training. Buyer may adjust schedule of the two trips as necessary for its needs.

PRODUCTS

NOT USED

EXECUTION

NOT USED

SECTION VI. EXTENDED SERVICE PLAN INFORMATION

GENERAL

The City may desire to enter into an extended service agreement. Provide a complete description and pricing of the extended service agreement once warranty has expired. Include a detailed description of service plan offered including providing trained and certified service representative of the belt filter press proposer to travel to the site twice per year and conduct, at a minimum, the following maintenance:

1. Grease belt tracking device rods and tension shafts
2. Check gear reducer oil level and replace as directed by the proposer
3. Inspect belt tracking system for proper operation
4. Inspect belt for tears and bearings for leaks
5. Inspect rubber seals for wear
6. Inspect doctor blades, roll coatings, and oiler systems if provided
7. Inspect spray wash system and nozzles and clean if necessary
8. Check coupling alignment and mounting bolt tension
9. Grease gravity belt roller bearings
10. Repack gearbox bearings as recommended by proposer
11. Inspect and adjust drive motor per proposer's recommendations
12. Inspect and adjust drive washwater booster pump (if required) per proposer's recommendations
13. Inspect and adjust hydraulic/pneumatic belt tensioning system per proposer's recommendations

Schedule shall begin after equipment has been field tested and has been turned over to the City. Services listed here are in addition to the requirements stated in the technical specifications.

SECTION VII. BENCH TESTING REQUIREMENTS

1.01 GENERAL

1. Proposer is responsible for all costs associated with the bench testing.
2. Proposer to coordinate with plant staff for sample logistics – proposer should ship sample shipping containers to the plant with return labels. Plant staff will collect sludge samples and ship the sample(s) and quantity of plant polymer to proposer's testing facility within the continental United States.
3. Proposer shall report the results to City in a written report. Report shall have the following sections:
    a. Introduction
    b. Protocol/Methodology
        i. Method Reference
        ii. Method/Test Overview Description
    c. Sludge Physical Characteristics Test Results - % solids, % organic solids, other
    d. Dewatering Indicator Test Results
    e. Discussion
    f. Conclusions/Recommendations
        i. Suitability for belt filter press dewatering
        ii. Anticipated Performance Outcomes:
            1. Total Cake Solids
            2. Capture Rate
            3. Polymer Dose per dry ton
4. While the Bench Testing Results are more for informational purposes, Results may be considered as part of the shortlisting process for invitation to perform pilot testing.

SECTION VIII. PILOT TESTING PROTOCOL

PART 1 - GENERAL

1.1 OVERVIEW

The City of Iowa City, IA (OWNER) is replacing three 2.2 meter belt filter presses (BFPs) at its wastewater treatment plant with two 2.2-meter units with option for a 3rd unit. Based on the BFP proposer's submittal information, individual belt filter press proposers will be invited to pilot test their unit. The pilot test results will become part of the evaluation and final selection of the BFP equipment.

Pilot testing is by invitation and necessary in order to be considered in the selection process so proposers are encouraged to participate in the pilot testing. Lack of participation in on-site piloting will result in elimination from further evaluation of the proposers' proposals.

The purpose of this document is to provide guidance on the pilot testing to be conducted at the plant.

1.2 EXISTING PROCESS

The South Wastewater Treatment Plant anaerobically digests and then dewaters primary and waste activated sludge. Currently, dewatering is accomplished using two meter belt filter presses that were installed ca. 1990. Three BFPs were originally installed, but the number of operational units is normally limited due to mechanical issues and the age of the units.

The original mesophillic digestion system was converted to temperature-phased anaerobic digestion (TPAD) in approximately year 2000. Primary sludge is blended with waste activated sludge prior to digestion. The waste activated sludge is generally the product of a nitrifying activated sludge process. The process does experience some enhanced biological phosphorus removal. The following table summarizes the performance of the system in 2015.

City of Iowa City, IA – South WWTP - Summary of 2015 Belt Filter Press Operating Data	
Parameter	**Value**
Average dewatered cake solids	19.4%
Average feed solids	1.6%
Average Recovery	93.7%
Average solids loading	442 lb/hr/meter
Average hydraulic loading	54 gpm/meter
Average polymer usage	23 lb/dry ton

Current polymer being used	Ztag 8160

1.3 PILOT TESTING OBJECTIVES

The overall objectives of the pilot testing include the following:

- Verify that selected belt filter presses will satisfactorily dewater digested sludge from the TPAD operation.
- Ascertain the BFP performance parameters including cake solids, solids capture, and polymer feed rate.
- Provide opportunity for plant staff to familiarize themselves with the specific BFP equipment.

1.4 CONTACTS FOR INFORMATION

As noted earlier, those BFP proposers determined to be further considered will be invited to pilot test their unit. The ENGINEER will provide more information regarding pilot testing and will coordinate the pilot testing activities. The ENGINEER's contact information is:

Engineer:	Site Contact:
Deb Mathias – Stanley Consultants	Roger Overton, City of Iowa City
PH: (563) 264-6313	PH: (319) 887-6104
E-mail: mathiasdebra@stanleygroup.com	E-mail: Roger-Overton@iowa-city.org

1.5 REIMBURSEMENT

The OWNER understands that proposers will incur costs to complete the specified pilot testing. The OWNER will reimburse each proposer that completes the pilot testing and submits the specified report a lump sum of $13,000.

1.6 SUBMITTALS

Proposer shall provide the following submittal information with the bid proposal.

1. Model of pilot unit that will be employed, confirming it is the same model as that proposed for the full scale permanent installation.
2. Drawings of pilot unit and trailer identifying utility connection points. Identify sludge discharge location and spatial requirements such as height.
3. Utility connection requirements including size and capacity (e.g. sludge feed, plant water, electrical, drain, other).
4. If the sludge feed capacity of the OWNER's existing pump is inadequate to meet the various capacity test levels specified submit a plan for supplying a separate sludge pump (by Proposer) and connection details to existing system.

PART 2 - PILOT STUDY GUIDELINES

2.1 PILOT TESTING RESPONSIBILITIES

Pilot testing will be conducted at the City of Iowa City, IA South WWTP. For this pilot testing, OWNER will provide the following:

- Plant water, potable water, and feed sludge via process hoses as noted in Section 2.3.3.
- Discharge locations for filtrate from the pilot units.
- Sample bottles and laboratory testing for process performance (frequency of samples discussed in Section 2.4.3).
- Current plant polymer diluted to 0.52% concentration as active.
- Power supply as noted in Section 2.3.3.
- Dewatered sludge container and removal.

The proposer is responsible for the following:

- Providing pilot belt filter press that is the exact same model as that proposed for the full scale installation.
- Providing on site personnel at all times with pilot unit is in operation.
- Sampling, transportation, and testing of any preliminary samples (bench scale tests) required prior to testing. Proposer shall be responsible for coordinating sample collection with plant staff and shipment of samples to the testing facility.
- Pilot unit transportation, setup, working with OWNER on connecting utilities, and take down, including loading and unloading.
- Submitting sludge and utility connection requirements with bid proposal (i.e. size and type of connection). Confirm connection requirements a minimum of one week prior to testing.
- Manned operation of the pilot unit for first week and then technical support for second week of pilot testing.
- Preparation and submittal of pilot test summary report.
- All necessary fittings, equipment, etc required to connect to process connections provided by the OWNER.
- Sludge feed pump, piping, and associated fittings if desired sludge feed rates are higher than 125 gpm.
- Calibrated gauges for sludge and polymer feed in English units and any measuring devices to confirm plant/potable water flow rates, feed sludge flow rates and polymer flow rate.
- Sample bottles for and laboratory analysis of samples taken in addition to those proposed for the pilot test (see Section 2.4.3).

OWNER assumes no responsibility for damage to equipment or associated losses to the proposer as a result of the pilot testing.

2.2 PILOT SCHEDULE

All interested proposers will provide two working weeks of pilot testing. First week will require the proposer's technician operate and report the operational results of the pilot test. The second week will allow the OWNER's staff to operate the pilot unit with direct supervision from the proposer's technician.

The tentative schedule for pilot testing activities is shown in the following table.

City of Iowa City, IA - WWTP - Summary of Belt Filter Press Proposed Pilot Testing Schedule	
Day	**Primary Activities / Objectives**
First Week	
Monday/Tuesday	Pilot unit setup and operations checkout.
Wednesday/Thursday/Friday	Pilot unit operation – with OWNER's current polymer.
Weekend	Coordinate with City staff for site access if needed. As necessary for following week's readiness.
Second Week	
Monday thru Thursday	Pilot unit operation – with OWNER's current polymer. Operation by Iowa City's staff.
Friday	Pilot unit takedown.
Sunday	Pilot unit must be off site.

2.3 PILOT SETUP / PROCESS CONNECTIONS

2.3.1. Pilot Unit Transportation

Pilot unit transportation to and from the site is the sole responsibility of the proposer. Proposer shall arrange for delivery of the pilot unit to the site between 7:00am and 3:00pm, Monday thru Friday. Delivery shall be coordinated with ENGINEER and OWNER at least 3 working days in advance. Any special needs such as cranes, hoists, etc. must be provided by the proposer. OWNER will not assist in the unloading or loading of pilot test equipment.

2.3.2. Pilot Unit Setup Area

Pilot units shall be set up in the eastern truck loadout bay of the Solids Processing Facility. Alternatively, the pilot unit may be set up outside of the of the eastern truck loadout bay on the south side.

2.3.3. Process Connections

The proposer shall provide all adapters, fittings, or special piping to connect the pilot unit to the existing 6" sludge feed lines (standard bolted flange). If proposer provides a sludge feed pump see below. The proposer shall provide necessary piping from the pilot unit to the plant drain in the truck bay for filtrate from the belt filter press operation. Proposer should anticipate a 50 ft distance from the pilot unit to the nearest process drain if located inside the truck loadout bay.

OWNER will pump sludge to the pilot unit using one existing double disc pumps tied into the digester transfer lines. The maximum capacity of the existing pump is 125 gpm. Proposer shall provide a sludge flowmeter, with certified calibration, for verification of flow to the pilot units. When adjustments are necessary to the sludge feed rate, the proposer should coordinate the change with OWNER operations staff. OWNER will make changes to pump speed.

If higher sludge feed rates are required to meet the pilot testing criteria, proposer shall supply a pump capable of delivering the required capacity, piping, and all fittings to tie into an existing 6" standard bolted flange upstream of the existing sludge pumps (up to 250' from pilot unit). If proposer supplies the sludge pump, they will be responsible for operation of the pump and for necessary coordination with plant staff.

OWNER will provide chlorinated plant effluent water at 85-90 psig for the pilot unit. A 1.5" quick connection will be available for connection to and Proposer shall anticipate up to 50 ft distance from pilot unit to plant effluent water connection if located inside truck loadout bay.

OWNER will provide current plant polymer for use by proposer during pilot testing. Polymer will be provided in liquid form already diluted to the concentration used by the OWNER in the existing system. OWNER will provide hose to pilot unit location. Proposer shall provide storage container and feed equipment required for pilot operation.

OWNER will provide a 100A, 460 V connection for the pilot unit. Proposer should anticipate the need for approximately 50 ft of wiring to the connection location if located inside truck loadout bay. Proposer shall provide all necessary fittings, etc. required for hookup to the existing electric supply location.

Proposer shall discharge dewatered sludge into container provided by OWNER. OWNER will remove dewatered sludge as required at no cost to Proposer. Proposers shall provide all conveyance, fittings, etc. that are necessary to discharge residuals into discharge containers.

2.4 TESTING

2.4.1. Pilot Testing Objectives

In addition to those objectives discussed in Section 1.2, the following objectives are proposed for pilot testing:

- Wednesday- Pilot Testing with OWNER's Polymer – At 50 gpm/m (+/- 5%), maximize dewatered sludge solids percentage, achieve a minimum 20% TS dewatered solid concentration, and at varying polymer feed rates with a solids recovery above 95%. During testing proposer shall collect samples identified in 2.4.3 every hour for at least 6 hours over the day. At least three data points shall be obtained for each sludge/polymer/filtrate testing point before it is changed.
- Thursday– Pilot Testing with OWNER's Polymer – At 75 gpm/m (+/- 5%), maximize dewatered sludge solids percentage, achieve a minimum 20% TS dewatered solid concentration, and at varying polymer feed rates with a solids recovery above 95%. During testing proposer shall collect samples identified in 2.4.3 every hour for at least 6 hours over

the day. At least three data points shall be obtained for each sludge/polymer/filtrate testing point before it is changed.

- Friday – Pilot Testing with OWNER's Polymer – At 100 gpm/m (+/- 5%), maximize dewatered sludge solids percentage, achieve a minimum 20% TS dewatered solid concentration, and at varying polymer feed rates with a solids recovery above 95%. During testing proposer shall collect samples identified in 2.4.3 every hour for at least 6 hours over the day. At least three data points shall be obtained for each sludge/polymer/filtrate testing point before it is changed.
- Second Monday – Proposer may utilize this day to demonstrate the capabilities of their equipment beyond the performance previously specified.

2.4.2. Pilot Unit Operation

The proposer shall provide at least one technician at the site at all times to operate the pilot unit. The pilot unit shall be operated for a minimum of 8 hours each day, from 7:00am to 3:00pm. On Monday of the second week of the pilot test, the proposer shall assist OWNER's staff in the operation of the pilot unit. During the second week, the technician shall supervise the plant staff to closely observe and operate the equipment.

2.4.3 Testing and Analysis

OWNER will provide all sample bottles and analysis of normal pilot samples. During the testing, samples should be taken periodically throughout the test when operational parameters are changed and after the pilot unit reaches steady state operation as identified above. Samples and suggested analyses are shown in the following table.

Summary of Samples and Analysis to Be Taken During Pilot Testing	
Sample location	**Analyses / Parameters**
Sludge Feed	Total Solids (%) Percent Volatile Solids (%) pH, Temperature
Dewatered Cake	Total Solids (%)
Filtrate	Total Suspended Solids (mg/l)

The proposer shall be responsible for collecting all pilot unit samples and recording the pH and temperature at the time of sampling. It is anticipated that at least six samples from each location will be taken each day. Results of OWNER's laboratory analyses will be provided to the proposer for the final report. Proposer may arrange at their own cost for analysis of additional or split samples. Analysis of those samples shall be by an independent laboratory selected by the proposer.

At a minimum, the following operational parameters should be recorded by the proposer during the testing:

- Sludge feed rate (gpm)
- Polymer feed rate (gpm)
- Belt speed (fpm)
- Belt pressure (psi)

The proposer shall provide OWNER with proof of calibration of the flowmeters used to meter sludge feed rate to the pilot unit. Certification shall be made by a certified technician for the brand of flowmeter used for testing.

2.5 PREPARATION OF RESULTS

The proposer shall prepare a summary report of the pilot testing results, including analyses by both OWNER and proposer. The summary report should contain a summary of performance under the conditions required for testing as well as any recommendations for enhanced performance with the full scale units.

Format of the report shall include following.

- Section 1 – Introduction, summarizing the pilot testing,
- Section 2 – Equipment, provide details on the pilot testing unit such as belt width
- Section 3 – Results, summarize in a table the pilot testing results from week one including:
    - Date of test
    - Time and duration of test
    - Sludge feed rate
    - Polymer feed rate
    - Belt speed
    - Belt pressure
    - Results from analyses listed in Section 2.4.3 (data provided by the OWNER)
- Section 4 – Recommendations, provide full scale unit recommendations for optimal operation.

The summary report shall be submitted to OWNER within 14 days after receipt of the pilot test analyses conducted by the OWNER.

SECTION IX. PILOT TESTING AGREEMENT

THIS AGREEMENT, made and entered into this _____ day of _____, _____, by and between the City of Iowa City, a municipal corporation, hereinafter referred to as the City, and _____, of _____, hereinafter referred to as the Proposer.

WHEREAS, the City of Iowa City has sought proposals from qualified and experienced manufacturers to supply two (2) Belt Filter Presses ("BFP's") to replace existing presses with the option for a third (3rd) press; and

WHEREAS, a Request for Proposals (RFP) that outlined the specific conditions and instructions was issued; and

WHEREAS, it is necessary to conduct on-site pilot testing with a BFP that is a scaled version of the same make and model as the BFP that is proposed; and

WHEREAS, an initial evaluation of the proposals and results from mandatory bench testing of the City's sludge was utilized to shortlist proposers for mandatory pilot testing;

NOW THEREFORE, it is agreed by and between the parties hereto that the City does now contract with the Proposer to provide services as set forth herein.

I. SCOPE OF SERVICES

Proposer agrees to perform the following services for the City in accordance with RFP #_____, Attachment Part 2, Pilot Testing ProtocolStudy Guidelines, which is incorporated herein, and to do so in a timely and satisfactory manner.:

A. Proposer shall deliver to the City of Iowa City South Wastewater Treatment Plant a pilot belt filter press and all necessary attachments. The pilot belt filter shall be a scaled version of the full size make and model proposed and will have the same processes, operation and functional characteristics as the full-sized belt filter press. Proposer shall be responsible for the temporary connection/installation of said pilot belt filter press to process the City's sludge.

B. The pilot testing period will extend for two weeks, including delivery, connection, testing, disconnection, and removal.

C. Proposer shall operate the equipment during the first week to optimize press performance with the facility's sludge and polymer and obtain performance data to be utilized in the procurement proposal evaluation.

D. Proposer's representative shall provide on-site training for all aspects of the system to the City's staff and shall remain on-site throughout the pilot testing period.

E. City staff will operate the equipment during the second week with Proposer's representative overseeing and assisting in operation to allow staff to assess operability and maintainability of the equipment.

II. TIME OF COMPLETION

The Proposer shall complete the following phases of the Project in accordance with the schedule shown.

Pilot Testing Period: March 13 to May 19; Vendor to arrange with City for their 2 week test period; One vendor will pilot at a time. City reserves the right to shorten or lengthen the pilot testing period depending on how many vendors are selected to pilot

Pilot test results are due no later than 14 days after completion of the vendor's pilot test.

PRESENT SCHEDULE OF SERVICES

RFP Date:	February 1
RFP Question Cutoff Date:	February 17
Bench Testing Period:	Feb 6 - 24
RFP Due Date:	March 1
Short Listing:	Mar 2 – Mar 10
Pilot Invites:	Mar 10
Pilot Testing Period:	March 13 – May 19
Last Pilot Report due:	June 2
Evaluation/Selection:	June 4 – 21
Notice of Award:	June 23

III. GENERAL TERMS

A. The Proposer shall not commit any of the following employment practices and agrees to prohibit the following practices in any subcontracts.
   1. To discharge or refuse to hire any individual because of their race, color, religion, sex, national origin, disability, age, marital status, gender identity, or sexual orientation.
   2. To discriminate against any individual in terms, conditions, or privileges of employment because of their race, color, religion, sex, national origin, disability, age, marital status, gender identity, or sexual orientation.

B. Should the City terminate this Agreement, the Proposer shall be paid for all work and services performed up to the time of termination. However, such sums shall not be greater than the "lump sum" amount listed in Section IV. The City may terminate this Agreement upon seven (7) calendar days' written notice to the Proposer.

C. This Agreement shall be binding upon the successors and assigns of the parties hereto, provided that no assignment shall be without the written consent of all Parties to said Agreement.

D. It is understood and agreed that the selection of the Proposer by the City is for pilot testing is for procurement evaluation purposes only, and any work performed during pilot testing by Proposer is as an independent contractor.

E. It is agreed by the City that all records and files pertaining to information needed by the Proposer for the project shall be available by said City upon reasonable request to the Proposer. The City agrees to furnish all reasonable assistance in the use of these records and files.

F. It is further agreed that no Party to this Agreement shall perform contrary to any state, federal, or local law or any of the ordinances of the City of Iowa City, Iowa.

G. The City agrees to tender the Proposer all fees in a timely manner, excepting, however, that failure of the Proposer to satisfactorily perform in accordance with this Agreement shall constitute grounds for the City to withhold payment of the amount sufficient to properly complete the pilot testing in accordance with this Agreement.

H. Should any section of this Agreement be found invalid, it is agreed that the remaining portion shall be deemed severable from the invalid portion and continue in full force and effect.

I. The City reserves the right to make changes to the Services to be provided which are within the Pilot Testing Agreement. No assignment, alteration, change, or modification of the terms of this Agreement shall be valid unless made in writing and agreed to by both the City and the Proposer. The Proposer shall not commence any additional work or change the scope of the Service until authorized in writing by the City. Proposer shall make no claim for additional compensation in the absence of a prior written approval and amendment of this Agreement executed by both the Proposer and the City. This Agreement may only be amended, supplemented or modified by a written document executed in the same manner as this Agreement.

J. Upon signing this Agreement, Proposer acknowledges that Section 362.5 of the Iowa Code prohibits a City officer or employee from having an interest in a contract with the City, and certifies that no employee or officer of the City, which includes members of the City Council and City boards and commissions, has an interest, either direct or indirect, in this agreement that does not fall within the exceptions to said statutory provision enumerated in Section 362.5.

K. The Proposer shall provide insurance as follows:

1. Certificate of Insurance; Cancellation or Modification
   a. Before commencing work, the Proposer shall submit to the City for approval a Certificate of Insurance meeting all requirements specified herein, to be in effect for the full pilot testing period.

   b. The Proposer shall notify the City in writing at least thirty (30) calendar days prior to any change or cancellation of said policy or policies.

c. Cancellation or modification of said policy or policies shall be considered just cause for the City of Iowa City to immediately cancel the pilot testing and/or to halt the pilot testing, and to withhold payment for any work performed on the contract.

d. The policy shall be primary in payment, not excess or contingent, regardless of any other coverage available to the City.

2. Minimum Coverage

Any policy or policies of insurance purchased by the Proposer to satisfy its responsibilities under this Agreement shall include contractual liability coverage, and shall be in the following type and minimum amounts:

Insurance Requirements

Type of Coverage	Each Occurrence	Aggregate
a. Comprehensive General Liability		
(1) Bodily Injury & Property Damage	$1,000,000	$2,000,000
b. Automobile Liability	Combined Single Limit	
(1) Bodily Injury & Property Damage	$1,000,000	
c. Excess Liability	$1,000,000	$1,000,000

d. Worker's Compensation Insurance as required by Chapter 85, Code of Iowa.

The City requires that the Contractor's Insurance carrier be "A" rated or better by A.M. Best.

L. The Proposer specifically agrees to fully compensate the City for any damages that the City suffers arising from the Proposer's pilot testing, including any and all direct, incidental, or consequential damages.

M. The Proposer shall indemnify, defend and hold harmless the City of Iowa City and its officers, employees and agents from any and all liability, loss, cost, damage, and expense (including reasonable attorney's fees and court costs) resulting from, arising out of, or incurred by reason of any claims, actions, or suits based upon or alleging bodily injury including death, license, patent, or copyright infringement, or property damage rising out of or resulting from the Proposer's operations under this Agreement, whether such operations be by the Proposer or by any Subcontractor or by anyone directly or indirectly employed by either.

Proposer is not, and shall not be deemed to be, an agent or employee of the City of Iowa City.

Responsibility for Damage Claims - It is specifically agreed between the parties executing this Agreement that it is not intended by any of the provisions of any part of

the contract documents to create in the public or any member thereof a third party beneficiary hereunder, or to authorize anyone not a party to this Agreement to maintain a suit for personal injuries or property damage pursuant to the terms or provisions of this Agreement. Nothing in any special provision or any supplemental specification shall be construed as eliminating or superseding the requirements of this section.

Proposer further agrees to:

1. Save the City, its agents and employees harmless from liability of any nature or kind for the use of any copy-right or non-copyright composition, secret process, license, patented or unpatented invention, article, apparatus, or appliance, including any device or article forming a part of the apparatus or appliance of which the Proposer is not the patentee, assignee, licensee or owner, furnished or used in the performance of the contract.

2. Obtain all permits and licenses required by city, state and federal governments and pay all related fees. The Proposer shall also comply with all laws, ordinances, rules and regulations of the City, State of Iowa and the Federal Government.

N. It is specifically acknowledged that the City intends to rely on Proposer's expertise in selecting, installing, and operating the proposed BFP during pilot testing. Proposer hereby releases, waives and discharges the City from any and all liability for all kinds of loss or damage that Proposer may incur due to the pilot testing, and any claim of damage, including but not limited to any property damage to the Proposer's pilot Belt Filter Press or other property.

IV. COMPENSATION FOR SERVICES

The City will provide Proposer with a lump sum $13,000 payment upon completion of the Scope of Services detailed above. No additional expenses or amounts will be paid, including any travel, lodging, or shipping costs.

V. MISCELLANEOUS

A. It is further agreed that there are no other considerations or monies contingent upon or resulting from the execution of this Agreement, that it is the entire Agreement, and that no other monies or considerations have been solicited.

B. This Agreement shall be interpreted and enforced in accordance with the laws of the State of Iowa. Any legal proceeding instituted with respect to this Agreement shall be brought in a court of competent jurisdiction in Johnson County, Iowa. The parties hereto hereby submit to personal jurisdiction therein and irrevocably waive any objection as to venue therein, including any argument that such proceeding has been brought in an inconvenient forum.

C. The following documents are hereby incorporated into this Agreement in the following order of precedence: (1) RFP #___ Request for Proposals for the Belt Filer Press Replacement Project; (2) Proposer's Proposal, (3) and any subsequent agreement by the parties made in writing.

FOR THE CITY

By:_____

Title:_____

Date:_____

ATTEST:_____

FOR THE PROPOSER

By:_____

Title:_____

Date:_____

Approved by:

_____

City Attorney's Office

_____

Date

SECTION X. CITY OF IOWA CITY – PURCHASING DIVISION GENERAL CONDITIONS AND INSTRUCTIONS TO PROPOSERS

The general rules and conditions which follow apply to all proposals issued by the City unless otherwise specified. Proposers or their authorized agents are expected to fully inform themselves as to the conditions, requirements, and specifications before submitting proposals; failure to do so shall be at the Proposer's own risk.

REQUEST FOR PROPOSAL (RFP): is defined as a request for an offer, by one party to another, of terms and conditions with reference to some work or undertaking.

This document constitutes a **REQUEST FOR PROPOSAL**, and is thus a solicitation for responses. Conversely, this REQUEST FOR PROPOSAL is **NOT** a bid and is not governed by state or federal bidding requirements.

Moreover, any acceptance of a proposal shall NOT result in a binding contract between the City and the Proposer, but instead will simply enable negotiations to take place which may eventually result in a detailed and refined agreement or contract between the Proposer and the City.

"Proposal date" as referenced herein shall mean the local date and time specified in the proposal documents.

A. CONDITIONS FOR PROPOSING

1. NO CONTACT POLICY. After the date and time established for receipt of proposals by the City, any contact initiated by the Proposer or by a City representative, other than the Purchasing Division representative listed herein, concerning this Request for Proposal is prohibited. Any such unauthorized contact may cause the disqualification of the Proposer from the procurement transaction.
2. COMPLETENESS/AUTHORIZATION OF PROPOSAL. Proposer shall supply all information and submittals required by the proposal documents to constitute a proper proposal. The proposal shall clearly state the legal name, address, telephone number, and fax number of the Proposer. The proposal shall be signed above the typed or printed name and title of the signer. The signer shall have the legal authority to bind the Proposer to the proposal.
3. ADDRESSING OF PROPOSAL. Unless otherwise specified, faxed or e-mailed proposals will not be accepted. Proposal shall be submitted in a sealed envelope or box clearly marked on the front with proposal number and due date, and unless otherwise specified, addressed to:

   Attn: City Clerk's Office
   City of Iowa City
   410 E. Washington St., RM 140
   Iowa City, Iowa 52240-1826

4. PROPOSAL DEADLINE. Proposer shall be responsible for taking whatever measures are necessary to ensure that the proposal reaches the office of the City Clerk or other specified agent on or before the local time and date specified. The City shall not be responsible for, and may not consider, any proposal delayed in the postal or other delivery service, or in the City's internal

mail system, nor any late proposal, amendment thereto, or request for withdrawal of proposal received after the date specified. Proposals received after the time and date specified on the Request for Proposal will not be opened and will not be considered for award.
A written request for withdrawal of a proposal or any part thereof may be granted, provided the request is received in writing by the City prior to the specified proposal date.

5. RECEIPT OF PROPOSALS. Unless otherwise required by the Iowa Public Records law, during the process of negotiations, no proposals shall be handled so as to permit disclosure to competing Proposers of the identity of the Proposer with whom the City is negotiating or the contents of the proposal.

6. PROPOSALS BINDING 120 DAYS. Unless otherwise specified, all formal proposals, including any negotiations, submitted shall be binding for one hundred and twenty (120) working days following the due date for the proposal or negotiations, unless the Proposer(s), at the City's request, agrees in writing to an extension.

7. TRADE SECRETS OR PROPRIETY INFORMATION. Responses to this Request for Proposal become the exclusive property of the City of Iowa City. All documents submitted in response to this Request for Proposal may be regarded as public records and may be subject to disclosure. Protection from disclosure may apply to those elements in each submittal which are marked as "TRADE SECRET", "CONFIDENTIAL", or "PROPRIETARY". During the course of the submittal evaluation process or the course of the project, City of Iowa City will accept materials clearly and prominently labeled "TRADE SECRET", "CONFIDENTIAL", or "PROPRIETARY" by the respondent or other submitting party. The City of Iowa City will not advise as to the nature of the content of the documents entitled to protection to disclosure, or as to the definition of trade secret, confidential, or proprietary information. The respondent or other submitting party will be solely responsible for all such determinations made by it, and for clearly and prominently marking each and every page or sheet of materials with "TRADE SECRET", "CONFIDENTIAL", or "PROPRIETARY" as it determines to be appropriate. Respondents which indiscriminately so identify all or most of their submittal as protected from disclosure without justification may be deemed non-responsive.

   The City of Iowa City will endeavor to advise the Respondent of any request for the disclosure of the material so marked with "TRADE SECRET", "CONFIDENTIAL", or "PROPRIETARY", and give the proposer or other submitting party the opportunity to seek a court order to protect such materials from disclosure. If a party other than the proposer submitted the requested material, the proposer shall be solely responsible for notifying the submitting party of the request. The City's sole responsibility is to notify the proposer of the request for disclosure, and the City of Iowa City shall not be liable for any damages resulting out of such disclosure, whether such disclosure is deemed required by law, by an order of court or administrative agency, or occurs through inadvertence, mistake, negligence on the part of the City of Iowa City or their officers, employees, consultants, or subconsultants.

8. MULTIPLE PROPOSALS. Proposers may submit more than one proposal, provided the additional proposal or proposals are properly submitted on the proposal forms or in the proposal

format.

9. COMPETENCY OF PROPOSER. No proposal may be accepted from or contract awarded to any person, firm or corporation that is in arrears or in default to the City of Iowa City upon any debt or contract. Prior failure of a Proposer to perform faithfully on any previous contract or work for the City may be grounds for rejection. If requested, the Proposer shall present evidence of performance ability and possession of necessary facilities, pecuniary resources and adequate insurance to comply with the terms of these proposal documents; such evidence shall be presented within a specified time and to the satisfaction of the City.

10. COLLUSIVE PROPOSING. The Proposer certifies that the proposal is made without any previous understanding, agreement or connection with any person, firm, or corporation making a proposal for the same project, without prior knowledge of competitive prices, and that the proposal is in all respects fair, without outside control, collusion, fraud or otherwise illegal action.

11. OFFICERS NOT TO BENEFIT. Upon signing this agreement, Consultant acknowledges that Section 362.5 of the Iowa Code prohibits a City officer or employee from having an interest in a contract with the City, and certifies that no employee or officer of the City, which includes members of the City Council and City boards and commissions, has an interest, either direct or indirect, in this agreement, that does not fall within the exceptions to said statutory provision enumerated in Section 362.5

12. EQUAL EMPLOYMENT OPPORTUNITY. All Proposers are subject to and must comply with the provisions of the City's EEO policy and applicable local, state and federal antidiscrimination laws. All City contractors, subcontractors or consultants with contracts of $25,000 or more (or less, if required by another governmental agency) must abide by the requirements of the City's Contract Compliance. Emergency contracts are exempt from this provision.

13. WAGE THEFT. All City contractors with contracts of $25,000 or more must abide by the requirements of the City's Wage Theft Policy. Pursuant to the Wage Theft Policy, the City will not to enter into certain contracts with, or provide discretionary economic development assistance to, any person or entity (including an owner of more than 25% of the entity) who has admitted guilt or liability or been adjudicated guilty or liable in any judicial or administrative proceeding of committing a repeated or willful violation of the Iowa Wage Payment Collection law, the Iowa Minimum Wage Act, the Federal Fair Labor Standards Act or any comparable state statute or local ordinance, which governs the payment of wages, for a period of five (5) years from the date of the last conviction, entry of plea, administrative finding or admission of guilt.

    The Wage Theft Policy does not apply to emergency purchases of goods and services, emergency construction or public improvement work, sole source contracts excepted by the City's purchasing manual, cooperative/piggyback purchasing or contracts with other governmental entities.

B. BONDS AND INSURANCE

1. BID SECURITY. **When required**, no bid shall be considered unless accompanied by either of the following forms of bid security:

   a. A certified or cashier's check drawn on a solvent Iowa bank or a bank chartered under the laws of the United States, or a certified share draft drawn on a credit union in Iowa or chartered under the laws of the United States, in an amount equal to a minimum of five percent (5%) of the bid, or

   b. A bid bond executed by a corporation authorized to contract as a surety in the State of Iowa, in a penal sum of a minimum of five percent (5%) of the bid.

   The bid security shall be made payable to the TREASURER OF THE CITY OF IOWA CITY, IOWA, and shall be forfeited to the City of Iowa City as liquidated damages in the event the successful Proposer fails to enter into a contract within fourteen (14) calendar days and, when required, post bond satisfactory to the City insuring the faithful performance of the contract and maintenance of said work, if required, pursuant to the provisions of the bid documents and other contract documents. The amount of the check, draft or bond shall not constitute a limitation upon the right of the City of Iowa City, Iowa, to recover for the full amount of such damage.

   Security deposits of the lowest two (2) or more Proposers may be retained pending contract award or rejection. All other security deposits will be returned promptly.

2. PERFORMANCE BOND. When required, the successful Proposer shall furnish a bond in the amount of one hundred percent (100%) of the contract price, said bond to be issued by a responsible surety approved by the City and shall guarantee the prompt payments of all materials and labor and protect and save harmless the City from claims and damages of any kind caused by the operation of the contract, and shall also guarantee the maintenance of the improvement for a specified period following its completion and acceptance by the City. A letter of Irrevocable Credit from a responsible lending agency approved by the City, for the same guarantee(s) as noted above, may be submitted for approval. The City reserves the right to accept or reject this form of guarantee.

3. INSURANCE REQUIREMENTS. When required, the successful Proposer shall provide insurance as follows:

   a. Certificate of Insurance; Cancellation or Modification

      1. Before commencing work, the Contractor shall submit to the City for approval of a Certificate of Insurance meeting all requirements specified herein, to be in effect for the full contract period.

      2. The Contractor shall notify the City in writing at least thirty (30) calendar days prior to any change or cancellation of said policy or policies.

3. Cancellation or modification of said policy or policies shall be considered just cause for the City of Iowa City to immediately cancel the contract and/or to halt on the contract, and to withhold payment for any work performed on the contract.

4. The policy shall be primary in payment, not excess or contingent, regardless of any other coverage available to the City.

b. Minimum Coverage

Any policy or policies of insurance purchased by the Contractor to satisfy his/her responsibilities under this contract shall include contractual liability coverage, and shall be in the following type and minimum amounts:

Insurance Requirements

Informal Project Specs: Class I (under $1M)

Type of Coverage	Each Occurrence	Aggregate
a. Comprehensive General Liability		
(1) Bodily Injury & Property Damage	$500,000	$1,000,000
b. Automobile Liability	Combined Single Limit	
(1) Bodily Injury & Property Damage	$500,000	

c. Worker's Compensation Insurance as required by Chapter 85, Code of Iowa.

The City requires that the Contractor's Insurance carrier be "A" rated or better by A.M. Best.

C. SPECIFICATIONS

1. FORMAL SPECIFICATIONS. The Proposer shall abide by and comply with the true intent of the specifications (i.e., not take advantage of any unintentional error or omission). Whenever mention herein is made of a service to be provided in accordance with laws, ordinances, building codes, underwriters' codes or similar expressions, the requirements of these laws, ordinances, etc., shall be construed as the minimum requirements of the specifications.

   The absence of a written list of deviations submitted with the proposal shall hold the Proposer strictly accountable to the City and to the specifications as written. Any unauthorized deviation from the specifications may be grounds for rejection of the service when delivered.

2. PROPOSED ALTERNATE. When an item is identified in the bid document by a manufacturer's name or catalog number, it is understood that the Proposer proposes to furnish the commodity and/or service so identified by the City unless the Proposer specifically proposes

an alternate. In bidding on a proposed alternate, the Proposer shall clearly state on his/her bid exactly what he/she proposes to furnish, and forward with his/her bid, a complete description of the proposed alternate, including brand, model number, drawings, performance and test data, references, and any other information necessary for a complete evaluation. Proposer shall include a statement setting forth any changes in other materials, equipment, or other work which would be required by incorporation of the proposed alternate. The burden of proof of the merit of the proposed alternate is upon the Proposer. The City's decision to approve or disapprove of a proposed alternate shall be final.

3. QUALIFICATIONS, CREDENTIALS AND REFERENCES. The Proposer shall provide a description of qualifications, credentials, experience, and resources as they relate to the provision of the proposal. The Proposer shall also provide a list of clients for whom similar work has been performed within the last two years, including the firm, contact person, address, and phone number of each contact person.

4. ADDENDUM TO SPECIFICATIONS. Any substantive interpretation, correction or change of the proposal documents shall be made by written addendum. Unless otherwise specified the addendum will be posted to the City of Iowa City website: https://icgov.org/purchasing-bids

   Interpretation, corrections or changes of the proposal documents made in any other manner shall not be binding. Such interpretations, corrections or changes shall not be relied upon by Proposer. Any addenda shall be issued by the City within a reasonable time prior to the proposal date. It is the Proposer's responsibility to visit this web-site to insure that they have received all important addenda or revisions to the Request for Proposal prior to bidding.

D. SELECTION OF FIRM

1. REJECTION OF PROPOSALS. The City reserves the right to accept or reject any or all proposals, to waive irregularities and technicalities, and to request resubmission. The City also reserves the right to reject the proposal of any Proposer who has previously failed to perform properly or complete on time contracts of a similar nature, or a proposal from a Proposer who, investigation shows, is not in a position to satisfactorily and timely perform the contract.

2. SELECTION. The City desires to enter into negotiations and ultimately reach an agreement with a Proposer who demonstrates the best combination of attributes to conduct the project, and who also negotiates a project cost with the City that is fair and reasonable. The City may conduct discussions with any Proposer who has submitted a proposal to determine qualifications, for further consideration. Since the initial review by the City will be deemed preliminary in nature, the document and process will be deemed confidential until such time as the successful Proposer is selected. Criteria for selection will include but not be limited to:

   - The quality, availability, adaptability and life cycle costing of the commodities and/or service.
   - Guarantees and warranties.
   - Ability, capacity and skill to provide the commodities and/or service required within the specified time.
   - Ability to provide future maintenance and service.

- Character, integrity, reputation, experience and efficiency.
- Quality of performance of previous and/or existing contracts.
- Previous and existing compliance with laws and ordinances relating to contracts with the City and to the Proposer's employment practices.
- Whether the Proposer is in arrears to the City, in debt on a contract or is a defaulter on surety to the City.
- If reasonable doubts arise as to Proposer's solvency, the City reserves the right to require financial information sufficient to show solvency and/or require a performance bond.
- Such other relevant information as may be secured by the City.
- Cost estimate; the City is not required to accept the proposal with the lowest cost estimate.

Once the City has reached an agreement with the Proposer, a purchase order will be issued to the awardee. The purchase order will define the conditions of the contract between the City and the contractor selected to receive the award.

3. CORRECTIONS TO SUBMITTED PROPOSALS. Any changes that are made to this proposal using correction fluid, writing utensils, etc. before submission must be dated and initialed in each area that a change was made.

4. PRICING REQUIREMENTS. All pricing submitted by the Proposer shall be indicated in both words and figures. (Ex. $200.50, Two hundred dollars and fifty cents).

5. PRESENTATIONS. When required and based on an evaluation of proposals submitted, the City may select finalists who will be required to participate in interviews, including key personnel designated for the proposal, and to make presentations regarding their qualifications and their ability to furnish the required service to best serve the needs of the City.

   Formal presentations will be scored and evaluated by a committee. The evaluation committee will make a recommendation to the City Manager and if required, to the City Council for final approval. Nothing in the proposal can obligate the City to enter into a contract.

6. ERRORS IN PROPOSAL. Any ambiguity in any proposal as a result of omission, error, lack of clarity or noncompliance by the Proposer with specifications, instructions and conditions shall be construed in the light most favorable to the City. Changes in proposals shall be initialed and dated.

E. GENERAL CONTRACT PROVISIONS

1. CONTRACT AWARD. Upon City's selection and satisfactory negotiation between City and Proposer on the work to be performed, a written award in the form of a Purchase Order, contract or other instrument shall result in a binding contract without further action by either party. The contract shall be on forms provided by the City; or if the Proposer's contract document is used, the City reserves the right to modify any document to conform to the request for proposal and to do so in the light most favorable to the City.

2. INSURANCE. Current Certificate of Insurance in the amounts specified shall be on file with the City before work can commence.

3. AVAILABILITY OF FUNDS. A contract shall be deemed valid only to the extent of appropriations available to each project. The City's extended obligation on these contracts which envision extended funding through successive fiscal periods shall be contingent upon actual appropriation for the following fiscal year.

4. CHANGE IN LAWS: In the event of a change in law that frustrates the goals of the City relative to this contract, the City will be entitled to terminate the contract upon written notification to the vendor without cost or penalty to the City.

5. CONTRACT ALTERATIONS. The City reserves the right to make changes to the Services to be provided which are within the Project. No assignment, alteration, change, or modification of the terms of this Agreement shall be valid unless made in writing and agreed to by both the City and the Proposer. The Proposer shall not commence any additional work or change the scope of the Service until authorized in writing by the City. Proposer shall make no claim for additional compensation in the absence of a prior written approval and amendment of this Agreement executed by both the Proposer and the City. This Agreement may only be amended, supplemented or modified by a written document executed in the same manner as this Agreement.

6. SUBLETTING OF CONTRACT. Proposer shall not assign, transfer, convey, sublet or otherwise dispose of the contract or their right, title or interest therein, or their power to execute such contract to any other person, firm or corporation without the prior written consent of the City, but in no case shall such consent relieve the Proposer from their obligations, or change the terms of the contract.

7. CONTRACT PERIOD. Contract shall remain in force for the full specified period and until all services have been satisfactorily delivered and accepted and thereafter until all requirements and conditions shall be met, unless:

   a. Extended upon written authorization of the City and accepted by contractor, for a period negotiated and agreed upon by both parties, when in the best interest of the City.

   b. Terminated due to default, as described below.

8. DEFAULT. The contract may be cancelled or annulled by the City in whole or in part by written notice of default to the Proposer upon non-performance, violation of contract terms, delivery failure, bankruptcy or insolvency, or the making of an assignment for the benefit of creditors. The City reserves the right to grant Contractor a specified cure period during which to cure or remedy the default, which cure period shall be included in the written notice of default. If default is not cured within the specified time, City reserves the right, but is not obligated to, extend the cure period or City may deem the Contract terminated without further notice. In either event, the defaulting Contractor (or his/her surety) shall be liable to the City for cost to the City in excess of the defaulted contract price. Lack of knowledge by the Contractor will in no way be a cause for relief from responsibility.

   If the Contract is terminated, an award may then be made to the next qualified Proposer; or when

time is of the essence, services may be contracted in accordance with Emergency procedures.

9. DELIVERY FAILURES. Failure of a contractor to provide commodities and/or service within the time specified, unless extended in writing by the City, or failure to replace rejected commodities and/or service when so directed by the City shall constitute delivery failure. When such failure occurs the City reserves the right to cancel or adjust the contract, whichever is in the best interest of the City. In either event, the City may purchase in the open market commodities and/or service of comparable worth to replace the articles of service rejected or not delivered. On all such purchases, the Contractor shall reimburse the City, within a reasonable time specified by the City, for any expense incurred in excess of contract prices, or the City may deduct such amount from monies owed the Contractor. If the contract is not cancelled, such purchases shall be deducted from contract quantities. The City reserves the right to accept commodities and/or service delivered which do not meet specifications or are substandard in quality, subject to an adjustment in price to be determined by the City. Acceptance will be at the sole discretion of the City.

10. FORCE MAJEURE. The Contractor shall not be liable in damages for delivery failure when such failure is the result of fire, flood, strike, and act of God, act of government, act of an alien enemy or any other circumstances which, in the City's opinion, is beyond the control of the Contractor. Under such circumstances, however, the City may at its discretion cancel the contract.

11. INDEMNITY. The Proposer shall indemnify, defend and hold harmless the City of Iowa City and its officers, employees and agents from any and all liability, loss, cost, damage, and expense (including reasonable attorney's fees and court costs) resulting from, arising out of, or incurred by reason of any claims, actions, or suits based upon or alleging bodily injury including death, license, patent, or copyright infringement, or property damage rising out of or resulting from the Proposer's operations under this Contract, whether such operations be by the Contractor or by any Subcontractor or by anyone directly or indirectly employed by either.

    Proposer is not, and shall not be deemed to be, an agent or employee of the City of Iowa City.

    Responsibility for Damage Claims - It is specifically agreed between the parties executing this contract that it is not intended by any of the provisions of any part of the contract documents to create in the public or any member thereof a third party beneficiary hereunder, or to authorize anyone not a party to this contract to maintain a suit for personal injuries or property damage pursuant to the terms or provisions of this contract. It is understood that no subcontractor is a third party beneficiary to any contract between the Contracting Authority and the prime contractor. Nothing in any special provision or any supplemental specification shall be construed as eliminating or superseding the requirements of this section.

    Proposer further agrees to:

    a. Save the City, its agents and employees harmless from liability of any nature or kind for the use of any copy-right or non-copyright composition, secret process, license, patented or

unpatented invention, article, apparatus, or appliance, including any device or article forming a part of the apparatus or appliance of which the Proposer is not the patentee, assignee, licensee or owner, furnished or used in the performance of the contract.

b. Obtain all permits and licenses required by city, state and federal governments and pay all related fees. The Proposer shall also comply with all laws, ordinances, rules and regulations of the City, State of Iowa and the Federal Government.

12. ANTI-DISCRIMINATION. Proposer shall not discriminate against any person in employment or public accommodation because of race, religion, color, creed, gender identity, sex, national origin, sexual orientation, mental or physical disability, marital status or age. "Employment" shall include but not be limited to hiring, accepting, registering, classifying, promoting, or referring to employment. "Public accommodation" shall include but not be limited to providing goods, services, facilities, privileges and advantages to the public.

13. CHOICE OF LAW AND FORUM. The laws of the State of Iowa shall govern and determine all matters arising out of or in connection with this proposal, including but not limited to any resulting Contract, without regard to the conflict of law provisions of Iowa law. Any and all litigation commenced in connection with this proposal or any resulting Contract shall be brought and maintained solely in Johnson County District Court for the State of Iowa, Iowa City, Iowa, or in the United States District Court for the Southern District of Iowa, Davenport Division, Davenport, Iowa, wherever jurisdiction is appropriate. This provision shall not be construed as waiving any immunity to suit or liability in State or Federal court, which may be available to the City of Iowa City.

SECTION XI. CITY OF IOWA CITY WAGE THEFT POLICY

It is the policy of the City of Iowa City, as expressed by City Council Resolution No. 15-364 adopted on November 10, 2015, not to enter into certain contracts with, or provide discretionary economic development assistance to, any person or entity (including an owner of more than 25% of the entity) who has admitted guilt or liability or been adjudicated guilty or liable in any judicial or administrative proceeding of committing a repeated or willful violation of the Iowa Wage Payment Collection law, the Iowa Minimum Wage Act, the Federal Fair Labor Standards Act or any comparable state statute or local ordinance, which governs the payment of wages, for a period of five (5) years from the date of the last conviction, entry of plea, administrative finding or admission of guilt. (hereinafter "Wage Theft Policy")

I. **Application**. The Wage Theft Policy applies to the following:

a. Contracts in excess of $25,000 for goods, services or public improvements.

b. Contracts for discretionary economic development assistance. "Discretionary" economic development assistance shall mean any economic development assistance provided by the City of Iowa City that is not required by law.

II. **Exceptions.** The Wage Theft Policy does not apply to emergency purchases of goods and services, emergency construction or public improvement work, sole source contracts excepted by the City's purchasing manual, cooperative/piggyback purchasing or contracts with other governmental entities.

III. **Affidavit. The contracting entity must complete the attached affidavit showing compliance with the Wage Theft Policy and provide it to the Contracting Department prior to the execution of the contract.**

Contract provision: Any contract to which this policy is applicable will include the following contract provision: If the City becomes aware that a person or entity (including an owner of more than 25% of the entity) has admitted guilt or liability or been adjudicated guilty or liable in any judicial or administrative proceeding of committing a repeated or willful violation of the Iowa Wage Payment Collection law, the Iowa Minimum Wage Act, the Federal Fair Labor Standards Act or any comparable state statute or local ordinance, which governs the payment of wages, within the five (5) year period prior to the award or at any time after the award, such violation shall constitute a default under the contract.

IV. **Waivers.** If a person or entity is ineligible to contract with the City as a result of the Wage Theft Policy it may submit a request in writing indicating that one or more of the following actions have been taken:

a. There has been a bona fide change in ownership or control of the ineligible person or entity;

b. Disciplinary action has been taken against the individual(s) responsible for the acts giving rise to the violation(s);

c. Remedial action has been taken to prevent a recurrence of the acts giving rise to the disqualification or default; or

d. Other factors that the person or entity believes are relevant.

The City Manager or Designee shall review the documentation submitted, make any inquiries deemed necessary, request additional documentation if warranted and determine whether a reduction in the ineligibility period or waiver is warranted. Should the City Manager or Designee determine that a reduction or waiver of the ineligibility period is warranted the City Manager or Designee shall make such recommendation to the City Council. The City Council will make a final decision as to whether to grant a reduction or waiver.

SECTION XII. PRICING FORM AND COMPANY INFORMATION

The cost for this system must include all costs for supply, shipping and delivery, travel, and training needed for the full functionality and use of the system. All prices shall include shipping and be designated F.O.B. destination.

It's the City's intention is to select the belt filter presses based on the submitted proposals and the pilot testing. Upon selection of the belt filter presses, the City will proceed with a formal public improvement process for the ***purchase and installation*** of the belt filter presses. This public improvement solicitation will specify the equipment and vendor selected from this Request for Proposal.

Note: If adequate space is not provided below for line items, vendors shall include additional attachments that specify individual parts and pricing for each line item. Quotes that contain additional terms and conditions for this purchase will not be accepted. All Pricing must be completed below.

Cost of the Belt Filter Press

1.) Price per Belt Filter Press (ea) **$_____**

2.) Total Price for 2 Belt Filter Presses **$_____**

3.) Price for Optional 3rd Belt Filter Press **$_____**

Cost for Extended Service Plan

Proposers shall provide the City with option for maintenance of the equipment, if selected by the City. The bid price shall include all labor and travel expenses. Replacement parts or consumables are not part of the service plan price.

Annual maintenance plan **$_____**

A detailed description of the annual maintenance plan listed above must be provided in Section 7 of the vendor's submitted proposal.

Designated person(s) who can be contacted for information during the period of evaluation and for prompt contract administration upon award of the contract. Provide the following information:

Name: _____

Phone Number: _____

E-mail Address: _____

Exceptions, Deviations or other Agreements

Exceptions/Deviations to this Request for Proposal shall be taken below. Exceptions may not be added to any submittals after the due date. If adequate space is not provided for exceptions/deviations, please use a separate sheet of paper. **If your company has no exceptions/deviations, please write "No Exceptions" in the space provided. If you state no exceptions, you may not add your company's terms and conditions or any other documents to your submitted proposal or any submittals after the proposal due date.**

_____

_____

_____

_____

Prohibited Interest

Section 362.5 of the Iowa Code prohibits a City officer or employee from having an interest in a contract with the City, and certifies that no employee or officer of the City, which includes members of the City Council and City boards and commissions, has an interest, either direct or indirect, in this agreement, that does not fall within the exceptions to said statutory provision enumerated in Section 362.5

Your firm shall identify any relationship that has existed, or presently exists with the City of Iowa City and its staff that may interfere with fair competition or may be a possible conflict of interest for either party. **If no relationship has existed or does not presently exist, the company must make this statement in the space provided below (companies are subject to disqualification on the basis of any potential for conflict of interest as determined by the City of Iowa City).**

_____

_____

_____

_____

Liens, Unsatisfied Judgments, Disciplinary Actions

List any and all disciplinary actions, administrative proceedings, malpractice claims or other like proceedings against your company or any of its personnel relating to your firm's services that are current, pending, or occurring in the last five (5) years. If your company has no liens, unsatisfied judgments, or disciplinary actions that have occurred you must state this also.

_____

_____

_____

_____

City of Iowa City Wage Theft Policy

Your company must carefully review the policy included in Section V. of this Request for Proposal. Any objection that your company has regarding this policy must be stated in the space provided below.

If your company is in agreement with this policy and is able to uphold the policy, provide a statement in the space provided below.

_____

_____

_____

_____

Voluntary Demographic Information

- ▫ *"Women owned business"* means a business that is fifty-one percent or more owned, operated, and actively managed by one or more women.
- ▫ *"Minority-owned business"* means a business that is fifty-one percent or more owned, operated, and actively managed by one or more minority persons. "Minority" persons are persons who are Asian, Black, Hispanic and Native American.
- ▫ *"Service-disabled veteran-owned business"* means a business that is fifty-one percent or more owned, operated, and actively managed by one or more service-disabled veterans, as defined in 15 U.S.C. §632.
- ▫ None of the Above

Designated person(s) who can be contacted for information during the period of evaluation and for prompt contract administration upon award of the contract. Provide the following information:

Name: _____

Phone Number: _____

The undersigned proposer, having examined and determined the scope of this Request for Proposal, hereby proposes to perform the work as described in the proposal documents and to do all work at the fees stated in the submitted proposal.

The undersigned proposer certifies that this proposal is made in good faith and without collusion and connection with any person or persons bidding on the project.

The undersigned proposer states that this proposal is made in conformity with the specifications and qualifications contained herein. In the event that there are any discrepancies or differences between any conditions of the vendor's proposal and the RFP prepared by the City of Iowa City, the City's document shall prevail.

Name of Firm:_____

Name and Title of Representative:_____

Authorized Signature:_____

Address:_____

_____

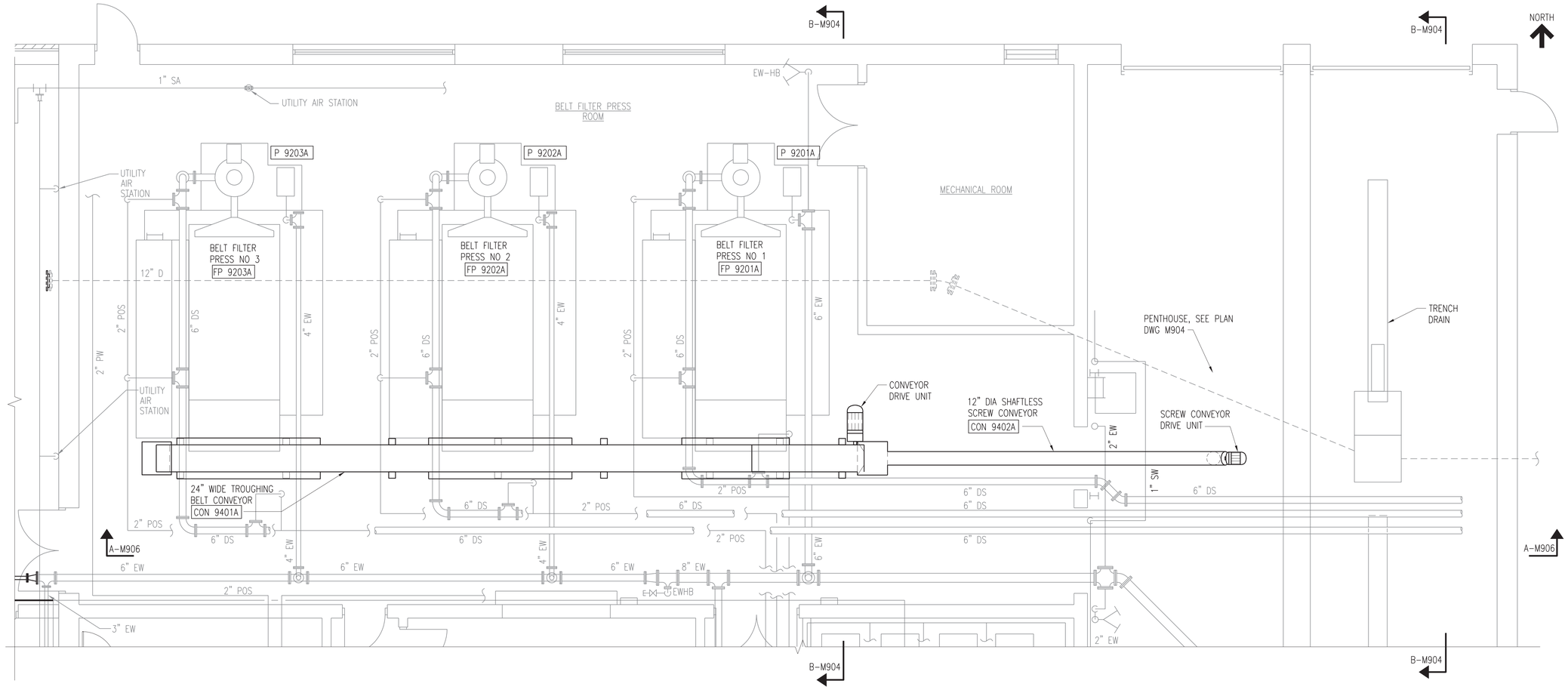
Date:_____

Phone:_____

Fax:_____

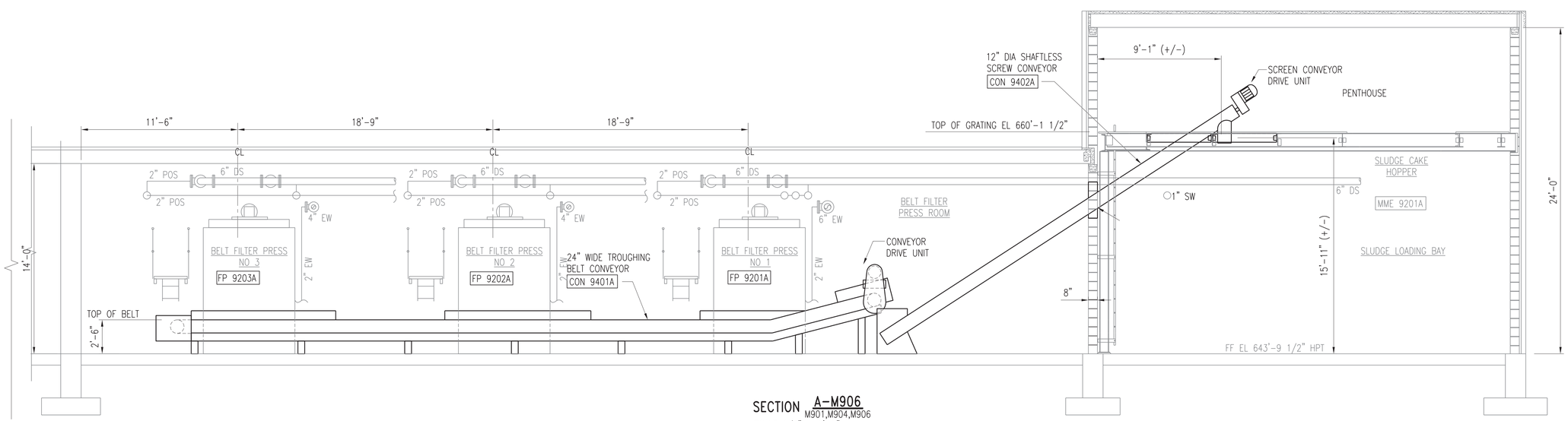
E-Mail Address:_____

Web Site:_____



ENLARGED PLAN – BELT FILTER PRESS ROOM

SCALE: 1/4" = 1'-0"



SECTION A-M906 / M901,M904,M906

SCALE: 1/4" = 1'-0"

REFERENCE DRAWING

NO.	REVISIONS	DSGN	CHKD	APVD	DATE

Stanley Consultants INC.

225 Iowa Avenue, Muscatine, Iowa 52761-3764
www.stanleyconsultants.com

CITY OF IOWA CITY, IOWA
WASTEWATER TREATMENT FACILITIES CONSOLIDATION PROJECT

Belt Filter Press Procurement

DESIGNED M AKYUREK
DRAWN LJ OSBORN
CHECKED M AKYUREK
APPROVED JB LUND
APPROVED
DATE January 27, 2017

SCALE: AS NOTED
NO. 22800
M906
REV. 0

AT FULL SIZE

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CADD D1-R4